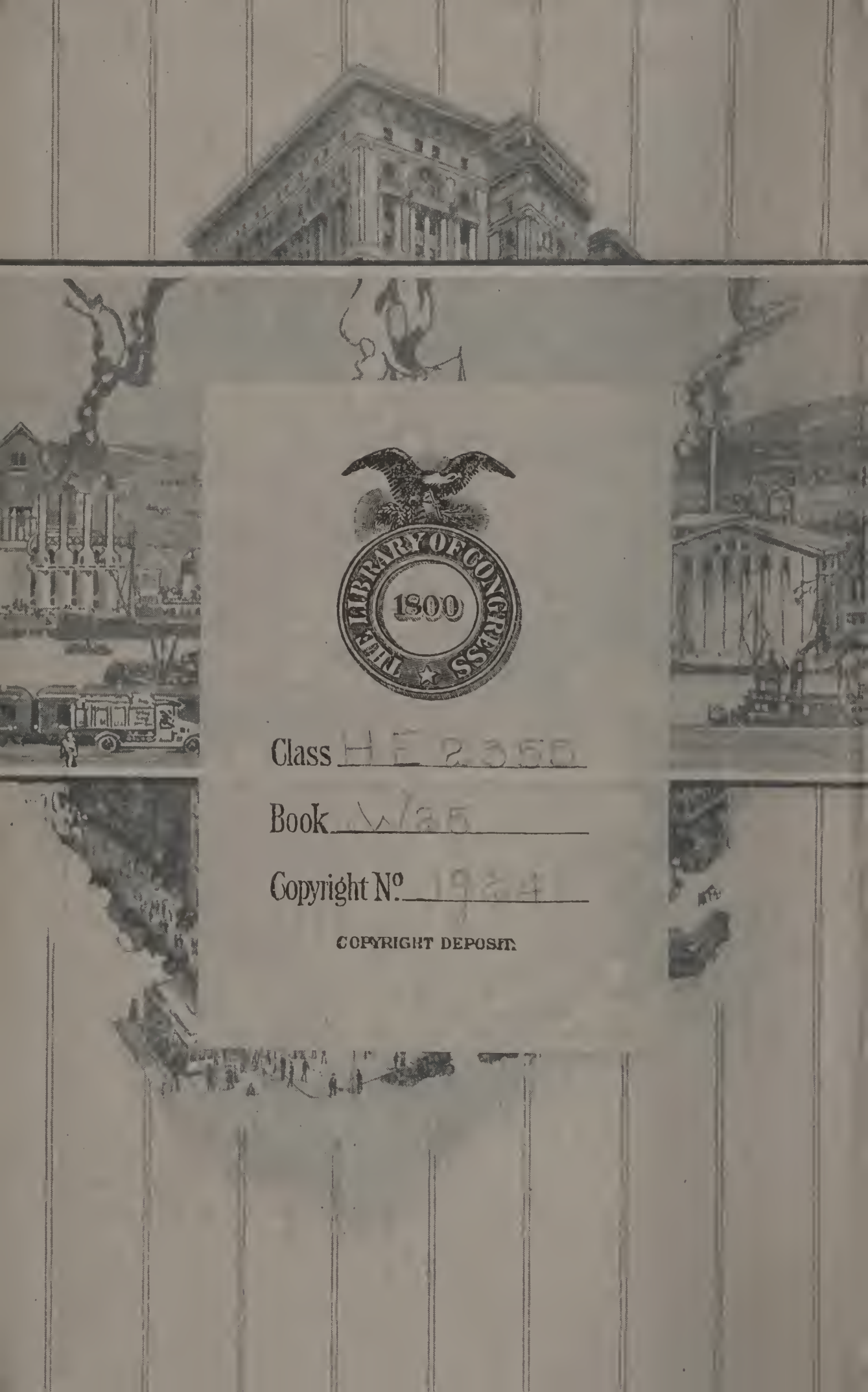

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UNITED
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Traffic Management

THE STANDARD COURSE
OF THE
UNITED Y. M. C. A. SCHOOLS

BOOK I
FUNDAMENTALS OF TRANSPORTATION

BOOK II
TARIFF INTERPRETATION AND RATE CONSTRUCTION

BOOK III
EXPRESS AND PARCEL POST:
CLAIMS AND TRANSPORTATION LAW

BOOK IV
OCEAN TRANSPORTATION

COLLATERAL REFERENCE BOOKS

READING ASSIGNMENTS

MAPS

Traffic Management

Authors of Reading Assignments

The Field of the Traffic Manager, *Burt Zimmerman*

Cooperation Between the Sales and the Traffic Departments..... *T. T. Harkrader*

Tariffs and Rates..... *William Simmons*

The Story of Transportation ..... *F. T. Bentley*

Express Service ..... *J. H. Butler*

Claims..... *C. L. Hilleary*

Romance in Overseas Trading.... *B. Olney Hough*

Vital Phases of Export Traffic.... *R. J. Menzies*

Fundamentals of Transportation

BY
CHARLES F. WALDEN

BOOK I

Revised Edition

ASSOCIATION PRESS
NEW YORK: 347 MADISON AVENUE
1924

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1924

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PREFACE

The Great War brought to the attention of the average man many things which had touched his life every day, but without making any distinct impression of vital relationship to his comfort or happiness. Prior to the winter of 1917-1918, for example, the householder in the eastern and middle states had given his orders for coal to his coal dealer and had been supplied promptly. It was, therefore, a distinct shock to him when, in that winter, he found that neither love nor money could fill an empty coal bin and that, as frequently happened, coal had to be doled out in quarter-ton lots; and even then there was not enough for all.

What was the trouble? There was coal at the mines and there was money aplenty to buy it; but the *means* of getting it from mine to home had broken down—the railroads could not transport the coal. The roads, as we know, had been taken over by the Government and every means at their command had been diverted, for the time, to rushing materials for the war.

The average man then learned that transportation was something vital in his life; something on which not only his own life depended, but the lives of the millions of men—our own and the Allies—who looked to America for supplies.

Transportation is indeed the *backbone* of our social and commercial body. If it suffers a break or dislocation, the entire body suffers paralysis.

The transportation of commodities is now an

engineering science, which has called into being the expert traffic manager. His job, like all other jobs demanding specialized knowledge and training, began in an humble way and grew in importance and necessity along with the expansion of the railroads themselves and with the development of the laws, rules, classifications, and rates which now mark traffic as perhaps the most intricate division of the field of commerce.

The transportation agencies developed their own traffic men. It was simply a matter of keeping abreast of the ever widening problems of transportation. At first, traffic was a comparatively simple matter; the railroads were all short lines and extended part way through a single state, or through parts of two states. But the day of consolidations and extensions came. Short lines were merged together into our present-day, semi-continental systems.

Cooperation began in the making of rates, classifications, and rules. Eventually, Congress was obliged to gather up the threads of intrastate transportation practice and weave them into blanket laws that would cover traffic in all interstate movement of freight.

Necessarily, as transportation practice became more intricate, the problems of the traffic man grew more complex, until it has now become practically impossible for a young man to gain experience sufficient to qualify him for a traffic manager's job unless he can be given opportunities to serve in every capacity in a highly organized

traffic department. And that is the reason for the course of training in Traffic Management, embodied in these textbooks and their accompanying Reference Books and Reading Assignments.

Late in 1920, the Traffic Management Commission of the United Y. M. C. A. Schools began its plans for building the course. Two goals were set up for attainment; namely, first, that the course should be an exposition of sound traffic practice; second, that only such information should be given in the texts and Reference Books as would be absolutely needed by the student, to meet and solve everyday traffic problems.

The Traffic Management Commission, consisting of A. H. Speer, Educational Secretary, Minneapolis, F. C. Fields, Educational Director, Indianapolis, and C. V. Thomas, Educational Secretary, Cleveland, after mapping out the plan of the course and the contents of the texts, called to their aid as an Advisory Commission five experienced traffic men. These men were T. E. Hawk, Traffic Manager, Deere, Webber Company; Lee Kuempel, Assistant Manager, Minneapolis Traffic Association; W. H. Perry, Traffic Manager, Pillsbury Flour Mills Company; H. D. Tumbleson, Manager, Lee Tire Company; and Burt Zimmerman, Instructor of Traffic Management, Cleveland School of Technology.

The author of the texts, Charles F. Walden, Freight Traffic Specialist, accumulated his broad, practical knowledge of transportation in thirty years of personal experience; twenty of those

years having been spent in the traffic department of the Pennsylvania Railroad.

The author desires to acknowledge most valuable assistance and suggestions, in preparing his manuscript, from Messrs. T. T. Harkrader, Manager of the St. Louis Branch of the American Tobacco Company, C. L. Hilleary, Traffic Manager, F. W. Woolworth & Company, and William Simmons, General Freight Agent, Southern Pacific Company.

The author desires also to acknowledge the valuable assistance, in preparing the Chapter on Drayage, rendered by Mr. Arthur G. McKeever, President, Ajax Trucking Company, Inc.

Acknowledgement is also made to the teachers of traffic courses in the Y. M. C. A. schools for valuable suggestions that have been utilized in preparing this revised edition.

The Reading Assignments were written by men who have attained eminence in their respective fields of traffic and transportation. They are F. T. Bentley, J. H. Butler, T. T. Harkrader, C. L. Hilleary, B. Olney Hough, R. J. Menzies, Wm. Simmons, and Burt Zimmerman. Who these authors are is conveyed in brief biographies in "The Key to the Course."

This course in Traffic Management is the product of careful planning and thought given to it by a score of most capable men, whose purpose has been to serve the young men who desire to equip themselves for entering the "new profession."

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Chapter 1

THE INDUSTRIAL TRAFFIC DEPARTMENT

Section I

Development of the Traffic Department

Why a Traffic Department.—Our country differs widely in topography, climate and density of population. The products of the different sections, either in their raw or manufactured state, must be transported to the commercial centers for distribution and consumption.

In order to transport these products our land is traversed with roads of steel over which continually pass long train loads of merchandise. A great fleet of steamships, carrying immense cargoes, plies between our seaports in coastwise and intercoastal trade. Another large fleet operates on the Great Lakes.

Through these great arteries of commerce flow the products of field, forest, factory, and mine, thus creating constantly innumerable traffic problems, both intricate and complex: For instance, the cotton grower in Texas must place his cotton in the New England mills in competition with the cotton growers of the Carolinas and Georgia. The oranges from the groves of California must be placed in the Eastern markets in competition with the oranges from the groves of Florida. The

manufacturers of New England must place their goods in the West in competition with the manufacturers of the Middle States, and so on.

The transportation companies are continually making rate adjustments to meet these sectional problems. They have created freight rate bureaus for the purpose of making exhaustive research in order to determine all the elements affecting rates on the almost countless variety of commodities and thus endeavor to issue tariffs containing reasonable and equitable rates. The task of satisfying shippers is extremely difficult and almost impossible.

Different Kinds of Traffic Management.—It will be observed that there are three different kinds of Traffic Management; viz., railroad, steamship, and industrial. Two other agencies of transportation that require skillful management might be mentioned, namely, express and motor truck companies.

Traffic Managers of the railroad and steamship companies are usually men who enter the employ of the companies in their youth, who have traveled the hard road of experience and have achieved this position of distinction by the development of exceptional ability in this particular branch of the business.

Industrial Traffic Management presents entirely different problems from those that confront the railroad and steamship traffic manager. There is no vocation more fascinating or presenting more varied problems than that of industrial

traffic management. The vocation never becomes monotonous because new and intricate problems are constantly arising.

Varied Problems.—An industrial Traffic Department is usually developed from a small beginning, and has solved its problems in its own way. It is built to fit the business and is sufficient to the task. There are no two Traffic Departments organized exactly alike, possibly for the reason that industrial traffic enterprise leads into realms that have not been fully developed and because our industries are varied, and have to do with the transportation of so many different commodities.

The size of a Traffic Department and the completeness of its organization depend principally upon the character and volume of the business, the variety of the commodities handled, the quantities in which they are shipped, and the extent of the territory in which they are distributed. If a business is extensive and diversified, a systematized Traffic Department is necessary. If, however, the business is large in volume, but with little detail, a small organization suffices. Some industries have given the Traffic Department jurisdiction over the physical handling of the product, thus adding to the opportunities as well as to the burdens of the department.

Introduction of the Traffic Man.—It was only a few decades ago that the industrial traffic man was first introduced. Men who had received their early training in the employ of the railroad and

had achieved a place of distinction were engaged by large industries to protect them in their dealings with the railroad. Prior to that period very little attention was given to proper packing and routing of freight, the shipper not being interested because the freight charges were usually paid by the customers. In the modern method of business, however, the shipper is intensely interested and mercantile establishments find a Traffic Department which cooperates closely with the purchasing and selling departments an excellent investment.

From time to time more laws to regulate commerce (the principle of which was to prevent discrimination) were put upon the statute books. The railroads were required to publish a multitude of rules and tariffs. The situation grew into a labyrinth of technicalities and became so complex that, as a result, the ordinary shipper was required to hire a traffic expert to handle his traffic affairs.

Many shippers still seem to be in ignorance of the value of a competent traffic manager, and some believe that a traffic department is merely an additional expense, when, on the contrary, it has been proved to be a large factor in the earning capacity of many mercantile concerns. A large traffic department in New York City has its account kept separately. It is debited with all the expense it incurs by its maintenance; i.e., salaries, losses in transportation, etc., and credited with its actual earnings; i.e., claims collected, rate and

classification adjustments obtained, etc. This department shows a profit each year of many thousands of dollars.

The great demand for men of technical training and versed in traffic matters has made schools necessary to round out the education of men for traffic work. The "Traffic World," the foremost publication of its kind, recently stated editorially the following:

> This is undoubtedly the day of the industrial Traffic Manager. It would seem that never, in the comparatively few years since the necessity for the Traffic Manager has been generally recognized in commercial business, has there been a time when it could not be truthfully said that never before was there greater opportunity for him and that never before was he able to be of such value to his employer. But it is more true now than ever. The day is coming when the traffic man will be as important and as powerful as the attorney to whom the head of the business turns for advice and whose advice he does not question. The lawyer knows the law and that ends it. He is hired to know the law. The traffic man knows the traffic game and what transportation measures are best for his own business and all business.

The Opportunity in Traffic Management.—A survey has not been made of the number of highly trained men engaged in handling the traffic affairs of shippers, but there are traffic clubs and organizations in all parts of the country, indicating a large field of activity. The total membership of these clubs runs into the thousands. The Traffic Club of New York City has a resident membership of some 1,500, and more than 800 of these represent Traffic Departments of industrial concerns. Yet, there are many business men who know little of the economies that are possible through an ade-

quate knowledge of technical traffic matters. There are thousands of concerns without Traffic Managers that could use them to advantage. No chamber of commerce, board of trade, or similar organization would be complete without a Traffic Department. All over the country, at the present time, merchants' associations of cities and towns are installing Traffic Departments. The success of this branch of the organization depends on the selection of a competent traffic man who has had the proper training. The field is wide and possesses many opportunities for young men who want to succeed, and are willing to pay the price of success.

Section II

Organization of a Traffic Department

Each Branch Specialized.—As the Traffic Department is developed, each branch of the work is specialized. Every one has a particular assignment, as is customary in any well regulated organization. Possibly a more graphic idea will be conveyed by a general outline of a Traffic Department in actual operation. The personnel of such a department in a large manufacturing concern, which has been in operation a number of years and which has been highly developed, is given on the following pages.

It is not possible to give an organization chart of a Traffic Department that could be followed generally, but the outline given will show the ex-

tent to which a Traffic Department may be developed to handle a large and diversified traffic. At the beginning, this department consisted of a Traffic Manager, a clerk, and a stenographer. Today it consists of forty-three people in the main office, and large units under its supervision at the manufacturing plants. The various positions in the department are given, together with the general subjects handled by each.

Personnel of a Well Organized Traffic Department.—

TRAFFIC MANAGER *(and his Secretary).*

SENIOR ASSISTANT TRAFFIC MANAGER, in charge of:

General railroad matters,
Supervision of the main office,
Rate adjustments,
I. C. C. and Classification matters,
Supplying the Purchasing and Selling Departments and the plants with rate information,
Complaints of service,
Solicitation Correspondence,
Switching,
Car Supply,
Demurrage,
Weight Agreements,
Statistics,
Attending rate meetings,
Meeting the public.

CHIEF CLERK: Rate and Routing Department,
Distributing mail,
Routing matters,
Passing reports and records,
Tracing important cars,
Embargoes,
Outstanding freight bills.

CHIEF RATE CLERK:
In charge of tariff file,
Overcharge claim correspondence,
Rate quotations,
Rate compilations,
Refunds, not in claim.

TWO RATE CLERKS:
Checking overcharge claims,
Freight allowances,
Checking freight bills.

TWO ROUTING CLERKS:
Compilation of routing sheets,
Routing supplies.

CHIEF CLAIM CLERK: Claim and Trace Department,
Claim and trace correspondence,
Reconsignments.

CLAIM CLERK:

Claim and trace correspondence.

CORRESPONDENT:

Initiating tracers,
Unclaimed freight,
Concealed losses,
Requests for bills of lading, invoices, assignments, etc.

ASSISTANT CHIEF CLAIM CLERK:

In charge of claim records,
Correspondence relative to remittances and accounts,
Tracing claims.

CLAIM CLERK:

Preparation of loss and damage claims,
Remittances,
Cancellation record.

CLAIM CLERK:

Claim register and ledger work.

SIX FILE AND MAIL CLERKS:

Filing of correspondence, tariffs, etc.,
Handling inbound and outbound mail,
Mimeograph work, etc.

THIRTEEN STENOGRAPHERS AND TYPISTS

ASSISTANT TRAFFIC MANAGER, in charge of:

Shipping departments and their personnel at plants.

Preparation of shipments:

Packing,
Checking,
Weighing,
Marking,
Loading.

Expediting shipments,

Complaints involving shipping departments,

Visiting plants.

ASSISTANT:

Cost figures on shipping expense,
Factory stocks and inventories,
Orders.

THREE CLERKS:

Records of daily shipments,
Orders for stock,
Reports.

ASSISTANT TRAFFIC MANAGER in charge of:

Trucking at all plants,
Trucking contracts,
Outside warehousing arrangements,
Approval of purchase of truck equipment.

ASSISTANT:

Trucking statistics,
Checking cartage bills,
Insurance of goods on trucks,
Checking trucking reports.

TWO CLERKS:

Arranging for hauling,
Placing of trucking orders,
Record of trucking.

The Traffic Department has charge of the product from the time it is delivered to the shipping floor by the manufacturing department, until it is finally delivered to the consignee. It ships on orders obtained by the selling department and accounts for the shipment to the accounting department, which bills the goods and collects the money. The Traffic Department is also responsible for the expense of shipping.

The man who was the clerk in this Traffic Department when it was established subsequently became the Traffic Manager and a director of this large organization and he is now the President of a large Western branch of this corporation.

Section III

The Traffic Manager

Definition of Traffic Manager.—

(a) The Traffic Manager is the person in charge of the shipping for his employer, which

may be a manufacturing company, wholesale distributor, exporter, mining concern, or anybody that ships or handles merchandise or material in sufficient volume to warrant employing a person to give his attention to that part of the business.

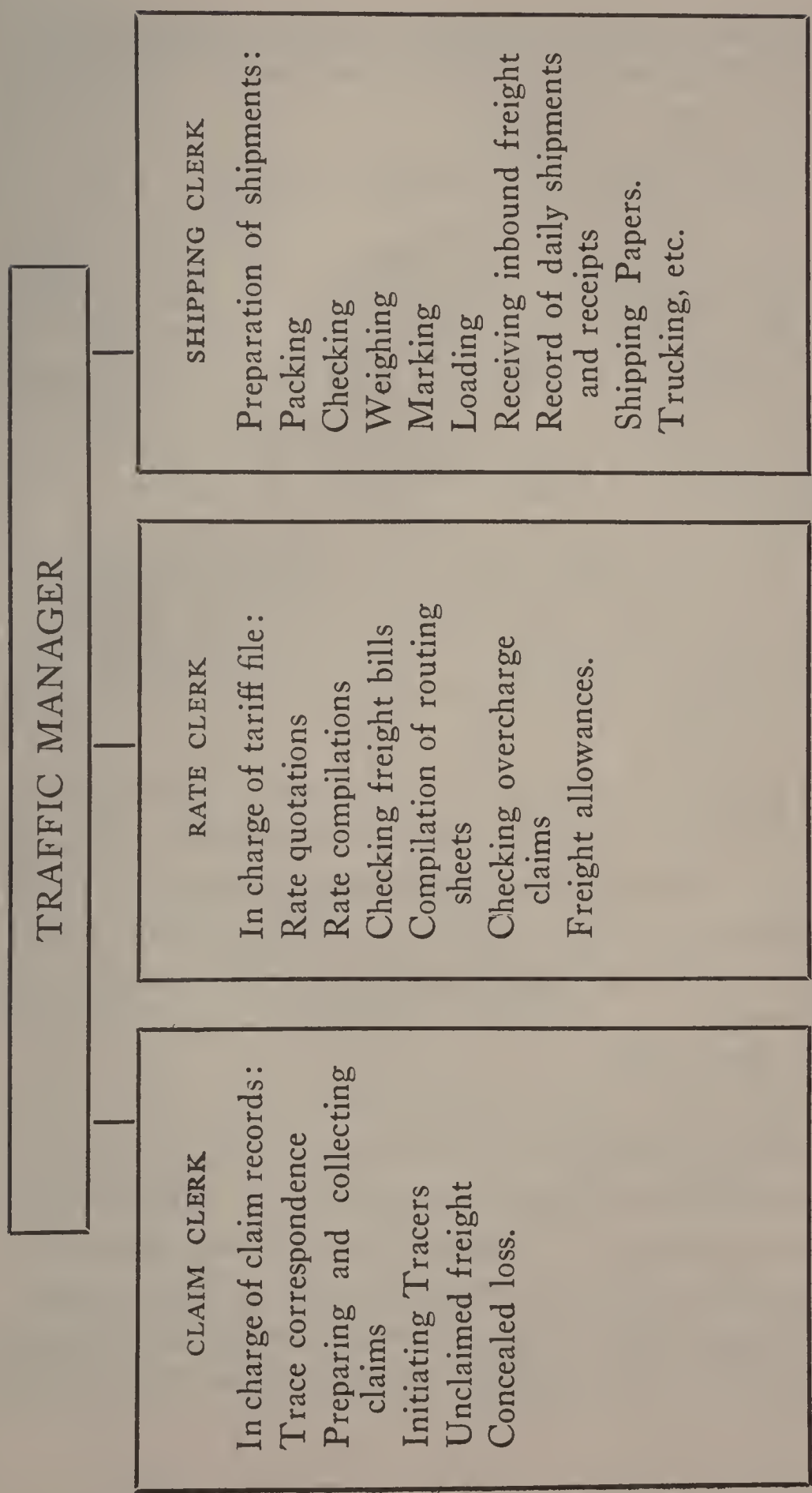
(b) The Traffic Manager is the shipping expert, who has a technical knowledge of railroads and routes, tariffs, rates and classification, transportation law, claims, and a practical understanding of the elements that enter into transportation.

(c) The Traffic Manager has full control of, and directs the policy in all shipping matters.

(d) The Traffic Manager is the transportation representative of the shipper in all dealings with the carriers.

(e) The competent Traffic Manager selects places where plants are located, branch houses established, divides the territory for the purchasing department and furnishes necessary information to the salesmen. The population of our country is still increasing and expanding, consequently production centers and sales routes are continually changing. In the location of additional manufacturing or distributing plants the territory to be served and the sources of raw material must be given most careful consideration. This makes it necessary for the Traffic Manager to solve these problems in order to conserve waste transportation.

A good shipping clerk and a good claim clerk are not necessarily traffic men, although some



PERSONNEL OF AN AVERAGE TRAFFIC DEPARTMENT

firms are satisfied to regard them as such. However, these men by education and training may achieve larger things.

Qualifications for a Traffic Manager.

(a) The Traffic Manager should know the country in general. He should have a clear conception of the geography of the United States. He should be so familiar with the railroad map of the country that he can trace the main lines of the important roads and know the most direct routes.

(b) He should know the individual merits of the various railroad systems and their workings with each other, their connections and junctions, and should know the location of the larger railroad centers.

(c) He should have a practical understanding of the elements that enter into transportation.

(d) To know the routes he must have a broad knowledge of rates, their construction and application, the classification affecting the commodities he handles or ships, the general rules, switching and demurrage.

(e) The Traffic Manager should be familiar with the important parts of the Interstate Commerce Act, including the decisions of the Interstate Commerce Commission and the courts, to guide him in the correct conduct of his business. He should also be familiar with such instruments as the bill of lading contract, bond of indemnity,

assignments, and the freight claim rules. He should know the Rules of Practice before the Interstate Commerce Commission and be capable of appearing before it to present his petition in the proper manner.

(f) In this age of the typewriter, the bulk of routine matters is handled by correspondence; the Traffic Manager should know the proper channels through which to handle his business.

(g) The Traffic Manager for the larger companies should be a man who has traveled sufficiently to know the location of the lines he uses, as well as the railroad officials with whom he does business. He should have the personal experience derived from travel. It may not be possible for him to visit distant terminals and junctions, but he can travel to the terminals in the city in which he is located. Intimate acquaintance with the officials and employees of the railroad and steamship companies that handle his traffic is not only advisable, but necessary in order to obtain satisfactory results. The Traffic Manager cannot transact all his business in an office.

(h) The Traffic Manager should possess the qualification of good common sense. He should have the sense of proportion and be practical in small things. He should have a will to please and a desire to render service.

(i) The Traffic Manager should possess a high degree of diplomatic ability. He should be on friendly terms with all. He should deal fairly

and strive to please. He should observe the Golden Rule. Too long have the shippers and carriers been antagonistic. This is the day of cooperation; whenever a common desire prevails to reach a point of agreement in the adjustment of a grievance, differences are soon ended.

The two most important requisites of a Traffic Manager are "Breadth of Understanding" and "Honesty of Purpose." Any traffic manager, who, for the sake of collecting a few dollars from a Transportation Company, will stand on the strictest technicalities, without considering the principles involved, is a failure, regardless of his traffic knowledge, and he will quickly place his concern before the carriers in a most unfavorable light. By knowing the limitations of the carriers and the problems to be worked out, the two interests can be reconciled.

Duties of a Traffic Manager.—The responsibilities of the Traffic Manager should be as follows:

First: To protect his company from loss (a) by complying with rate and classification requirements so as to obtain the proper rates; (b) by paying only the tariff rates; (c) by eliminating waste transportation in distribution—that is, loading the quantity of freight, the weight of which will equal the minimum weight upon which charges are assessed; (d) by reducing the number of mistakes; (e) by guarding against delays that may result in closing down of plants, or great loss

to his employer due to penalty contracts or fall in market prices; (f) by obtaining adjustments of unreasonable or unjust classification ratings and rates; (g) by collecting just claims.

Second: To bring about economies by reducing the cost of shipping, loading, trucking, etc.

Third: To obtain better service (a) by secure packing, and (b) by intelligent shipping, loading, and routing.

Fourth: To establish cordial relations with carriers in the spirit of cooperation and by a reputation for fair dealing.

Section IV

Subsidiary Traffic Jobs

Rate Clerk.—What has been said as to the duties and qualifications of the Traffic Manager applies to the men coming up the line; for as time goes on they must take the higher positions. Business is demanding men who are efficient, loyal, and upright.

There is no work of greater importance in the Traffic Department than that of RATES. The KNOWLEDGE of rates is the principal pillar supporting the structure. The Traffic Department is responsible for the correctness of the rates paid. It must supply correct information as to rates to the purchasing department, to guide it in purchases. It must advise the selling department in the matter of rates. The rate clerk

should become so familiar with the rates on his commodity that even the railroad agents will regard him as an authority. He should be so exact that, when he quotes a rate, he can name his authority for it and stand back of it without fear of contradiction.

Claim Clerk.—The man who handles claims has a job which, considered by itself, may be a profession. A good claim clerk, as well as a traffic manager, should have breadth of understanding and honesty of purpose, because he occupies a quasi-judicial position. He should always try conscientiously to decide fairly and impartially all problems which arise; otherwise his work will be a failure.

The actual knowledge necessary for a proper handling of the details of claim work may be listed under the following general headings:

First, a thorough knowledge of railroad transportation; second, a full understanding of the general principles of carrier's liability; third, a knowledge of rates and classification.

The first heading refers to a knowledge of the details of transportation; i.e., to understand thoroughly how freight is handled by carriers from the time it is received from the consignor until delivered to the consignee. In connection with both perishable and dead freight he should be thoroughly conversant with the details of proper loading, bracing, and sealing of cars, also with the handling of diversions, and in connection

with perishables, with refrigeration, ventilation, heater service, and schedules.

The second heading covers a general understanding of carrier's common law liability, provisions of the bill of lading, knowledge of the leading decisions, and a good common sense understanding of the service carriers are obligated to furnish. He should know something of the workings of the freight claim office of a railroad. He should know how to establish the facts in his claims.

The third heading covers a general knowledge of tariff interpretation, rate construction, and classifications, particularly those relating to crating, loading, bracing, and the terminal tariff covering handling of cars at destination and diversions.

Other Important Lines. — While rates and claims are the leading features of the Traffic Department, there are many side lines, which will be considered later.

Opportunity for Promotion. — It has been stated that the Traffic Department is a matter of growth; so with the Traffic Manager. The younger man starts either in a minor position of a large Traffic Department, or as the Traffic Manager of a small concern. Then by study and application, as he develops ability and knowledge, the larger fields are open to him.

Chapter 2

DEVELOPMENT OF TRANSPORTATION AND ITS REGULATION

COLLATERAL READING: In the Freight Traffic Red Book – The Elkins Act; Governmental Regulation.

Section I

Transportation Agencies

The Means of Transportation.—The history of transportation in America may be divided into three stages; namely, first, the period of turnpike construction when roads were improved so that horse or mule drawn vehicles could travel with greater ease and carry larger quantities of freight. At the place where the tolls were collected, there was a gate which closed and opened the road to traffic. This gate consisted of a stout pole armed with pikes—hence the name, turnpike. The second period of development in transportation was the building of canals. These, of course, were possible where two rivers or other bodies of water could be connected satisfactorily. Rivers themselves have been used as arteries for transportation during all history, since the invention of the first "dugout." The third period of transportation development is that of railroad construction. We are still living in that period, but it is now merging into a fourth—the era of motor trucks, aeroplanes, hydroplanes, and dirigibles.

Turnpike Construction.—In the early history of the country the sailing vessel was practically the only agency of transportation; but owing to the rapid growth in population other means of transportation became necessary and roads called turnpikes were built.

The period of the turnpike extended from the Revolution to 1830. During the close of the 18th century and early in the 19th, the construction of toll roads and turnpikes was begun by the New England and Middle States, to meet the demands of the growing population for highways. In 1790 a company was chartered to build a turnpike from Philadelphia to Lancaster, which marked the beginning of a series of pikes extending from Trenton, N. J., to Steubenville, Ohio.

Other turnpike roads were built with funds donated by the States and by the Federal Government. The most celebrated of these was known as the Cumberland Road or "National Pike," constructed by the United States. It was begun in 1811 at Cumberland, Md., and was slowly extended to Wheeling, W. Va., across Ohio and Indiana to Vandalia, Illinois. Further development in turnpike construction was retarded by the building of canals and railroads.

Digging Canals.—As early as 1762 surveys for canal routes were made in Pennsylvania, but the greater period of canal building was after the War of 1812. The first man who saw the future of canal communication was George Washington,

whose main efforts, however, were directed toward connecting Chesapeake Bay and the Ohio River. The period of great activity in canal construction dated from 1817 to 1850. Undoubtedly the primary reasons for this activity were to connect the Pennsylvania coal fields with the Atlantic Coast, and to connect the eastern settlements with the rapidly growing towns of the West.

The project of establishing a through canal route to the West was tried by New York, Pennsylvania, and Maryland, but only New York in its Erie Canal project was successful. This canal was begun in 1817 and completed in 1825. For half a century it was the most important water route between the Atlantic seaboard and the Central states.

The Erie Canal connects the Hudson River at Albany and Troy with Lake Erie at Buffalo. Its construction was principally due to the energy of De Witt Clinton, who was governor of New York during nearly all of its progress. As its route lay chiefly through an uninhabited wilderness, it opened for settlement an enormous territory. The canal has been immensely successful, contributing largely to the growth of New York and Buffalo. At the present time it is an important artery of traffic, and is the natural route by which grain should move from the West.

In the West, canal building never attained the prominence it did in such states as New York and Pennsylvania. Between 1830 and 1850, Ohio and Indiana built several canals connecting the Ohio

River with Lake Erie, and Illinois built a canal from Chicago to La Salle on the Illinois River.

The decline in canal building began in 1840 and was due, first, to the panic of 1837, which crippled the states financially; second, to the extension of railroads; third, to the cost of construction, which was greater than for railroads; and fourth, to their slow method of transportation.

The Era of Railroads.—There was little railroad building in the United States before 1830, at which time the Baltimore and Ohio Railroad, chartered three years previously, had 13 miles of track. Between 1830 and 1840 nearly 2,800 miles of track were built, most of it radiating from Philadelphia and New York. Up to 1850 railroad building was slow, but steady, with greatest activity in thickly settled New England.

The decade from 1850 to 1860 covered a period of railroad expansion, due to great business prosperity. Settlers developed large farm areas in the West and produced abundant crops, and cotton-growing in the South was greatly increased. The superiority of the railroad over the canal to transport these products and its cheaper cost of construction were demonstrated. Men were, therefore, induced to invest in railroad securities, especially since the discovery of gold in California had brought business activity and keen desire to speculate. Railroad construction was further stimulated by land grants from states and from the Federal government. Many short lines were joined together during this period.

Railroad development following the Civil War was very extensive until 1890. Construction was rapid during the period of 1866 to 1873, and in 1869 the first trans-continental line was completed. Further land grants by the Federal government aided development. The panic of 1873 temporarily checked railroad growth, so that there was little construction until 1880. The greatest period of railroad growth was the decade of 1880 to 1890, for during those years over 70,000 miles of track were built. This great activity was caused by a craze to speculate, due to the plentifulness of money. Since 1890 the construction of railroads has been very small, averaging less than 2,000 miles a year. The present railway systems total over 260,000 miles.

Motor Truck and Aircraft.—The motor truck is now largely used for short haul traffic in competition with the railroads. The employment of motor trucks in transportation service has again made the old turnpikes serviceable. They have been placed in modern shape and many additional highways have been built.

The service which the motor truck renders is desirable, because there is less packing required, there is no rehandling of freight and quicker deliveries can be made, with store door delivery the rule. The motor truck is also a feeder to the railroad, for by its use industries are able to locate at long distances from railroad stations and at interior points where land or rent is much cheaper.

Under the old method of cartage this location of industries would be impossible. Motor trucks are also of assistance to farmers in bringing their produce to the railroad station.

Some railroads have put motor truck units into operation, thus displacing local less-than-carload freight trains.

The aeroplane is used for carrying mail and some passenger service, but the use of it is still in an experimental stage.

Section II

Regulating Transportation

Attempts at Regulation. — There was little regulation of transportation agencies before 1887. Up to the year 1870 it was generally assumed that the price of railway services, like that of ordinary commodities, would be governed by competition. Every section of the country was eager to have railroad construction expedited, and far from burdening the railways with restrictions by regulation, on the contrary, many States gave liberal aid to the railroad companies, through the guaranteeing of bonds, direct money grants, free rights of way, etc. The Federal Government also made enormous grants of land to them.

When the railways became well established the popular belief in the efficiency of competition as a regulator of rates began to wane. Evidence of discrimination, as between individuals and localities, attracted popular attention, and a movement

in favor of regulation of rates by the State was started by the Grangers, then a powerful organization in several of the Western States. Many States immediately passed laws authorizing the appointment of Railway Commissions having power to fix rates. Down to 1886 it was the popular belief that a State had a right to regulate rates on all passenger and freight business within its boundaries. In that year, however, the United States Supreme Court decided that the regulation by a State of rates on traffic originating outside of the State, or destined to points outside of the State, is interference with interstate commerce (Wabash R. R. Co. v. Illinois, 118 U. S. Rep. 557).

As most of the traffic in the United States is interstate this decision practically deprived State regulation of its force. The public, however, demanded regulation of railways and Federal regulation became a necessity.

The Interstate Commerce Act.—In 1887, Congress passed the Interstate Commerce Act. This Act applies to interstate and foreign freight traffic when moving wholly by rail or partly by rail and partly by water, when both are used under a common control or arrangement for a continuous shipment. The Act created a commission to investigate and adjust transportation charges, and to correct abuses; but the commission was seriously hampered by the courts. It was almost impossible for a shipper to obtain any satisfaction. Out of

over thirty decisions rendered by the Interstate Commerce Commission only two were affirmed by the court; and it took about six years for each case to be legally decided. The orders of the commission were not binding and it was becoming the opinion that the Interstate Commerce Commission was useless, as its decisions were so persistently reversed by the courts. The effectiveness of the law lay in securing publicity of rates, reducing the freight charges, and adjusting rail charges in different localities.

The Elkins and Hepburn Acts. — The Elkins Act of 1903 endeavored to check the power which the "trusts" had gained over the railroads, and it did succeed in restricting discrimination to some extent, but it failed to secure reasonable rates or convey adequate powers to the Commission. As the Elkins Act did not contain any power for enforcement and possessed no "teeth," in 1904 and 1905 President Roosevelt insisted on proper legislation to regulate the railroads, so in 1906 the Hepburn Act was passed by Congress. This law broadened the field of Federal regulation. It was extended to cover both express and sleeping car companies. Pipe lines were expressly included. "Transportation" was broadly defined as comprehending among other things, "all services in connection with the receipt, delivery, elevation and transfer in transit, ventilation, refrigeration or icing, storage and handling of property transported."

The size of the Commission was increased to seven members. The railroads were forbidden to grant preferential treatment to coal mines in which they held an interest, and orders of the Commission were to take effect in thirty days.

The Mann-Elkins Act. — Further power was given to the Interstate Commerce Commission by the Mann-Elkins Act of 1910, under which the Commission could suspend changes in railway rates and fix maximum rates, the long and short haul provision was reenforced, and authority was given to enforce freight classifications.

Under the old law when an appeal was taken on a decision the burden of proof rested upon the Commission, but now it is reversed, and in order to secure relief from an order of the Commission, the carrier must be the petitioner before the courts. For each violation of the Commission's order the carrier incurs a penalty of Five Thousand Dollars a day, payable to the United States; further, for any infraction of the Act, carriers, shippers, and others are subject to a fine of Five Thousand Dollars for each offense for which no penalty is otherwise provided.

The Panama Canal Act.—This Act, passed in 1914, forbids railroads to have interest in any competitive common carrier by water operating through the Panama Canal or elsewhere. The Commission was given power to require connection of rail and water carriers, to establish through routes and maximum rates for rail and

water lines and to require carriers having traffic arrangements with one steamship to include all others plying from that port.

If any such existing specified service by water other than through the Panama Canal is being operated in the interest of the public and is of advantage to the convenience of the people and does not prevent nor reduce competition, the Interstate Commerce Commission may extend the time during which such service by water may continue. In each case of such extension, however, the rates, schedules and practices of such water carrier shall be filed with the Interstate Commerce Commission.

Additional Acts.—The Sherman Act of 1890 and the Clayton Act of 1914 also contain provisions for railroad regulation.

The Transportation Act of 1920.—By this Act the membership of the Interstate Commerce Commission was increased to eleven members, but the term of office was unchanged.

A number of sections contain amendments to the Interstate Commerce Act which have been incorporated in the appropriate sections therein. These amendments enlarged the powers of the Commission as follows:

1. It can permit pooling of traffic, when such pooling is in the interest of the public.
2. It may approve consolidation of railroads according to a sectional plan.

3. It can route goods in time of necessity, due to congestion or embargoes.
4. It is given power over car service.

The following brief explanation is given of these powers, as enumerated, in order that they may be clearly understood:

1. Pooling is the act of several carriers operating in the same territory entering into an agreement to pool their tonnage or earnings and make satisfactory adjustment between themselves. The object of pooling as it was practiced by the railroads was to prevent the cutting of rates.

The pools were agreements among railroads whereby their competitive traffic or the receipts from that traffic were divided among the companies, according to stipulated ratios. Arrangements for the division of the business were called Traffic Pools, and those for the distribution of the receipts, Money Pools.

However, there was great opposition on the part of the public to such arrangements for eliminating competition and thereby maintaining high rates and the practice was prohibited by Federal Enactments.

By the Transportation Act the Commission is empowered to permit pooling when, in its opinion, it will be in the interest of better service to the public, or economy in operation, and will not unduly restrain competition.

2. The Transportation Act authorized the Interstate Commerce Commission to prepare and

adopt a plan for the consolidation of the railway properties of the United States into a limited number of systems but in the division of the railroads into such systems competition must be preserved as fully as possible and wherever practicable the existing roads must be maintained.

While this Act authorizes the Commission to approve all railway consolidations yet it is not given power to compel the railways to consolidate.

The grouping or consolidation of railroads is deemed essential by many for the reason that some roads are now run at a great loss, and consolidation would be to their advantage because it would enable these roads to be absorbed by the larger corporations and the stockholders would be protected.

The purpose of the Sectional Plan is to divide all the railroads of the country into a limited number of systems, thus simplifying transportation. It would enable the weak roads to consolidate with the stronger and thereby place the railroad business on a sound basis.

If the grouping of railroads did not eliminate competition, it might possibly enable shippers to handle their traffic more satisfactorily, as through rates could be more easily established and classification would undoubtedly be more uniform.

Under authorization of the Commission, W. Z. Ripley, Professor of Transportation, Harvard University, prepared and submitted a plan divid-

ing the railroads of the country into nineteen systems, but this plan apparently has not met with much approval. Several other consolidations have been proposed, but they have not been satisfactory. It is evident that the plans submitted are not meeting with general approval and Congress will probably have to amend the Act and give the Commission more power if consolidations are to become a fact.

3. In time of necessity, due to congestions or embargoes, the Commission may make reasonable directions with respect to the handling, routing and movement of traffic over the lines of any carrier, which, in the opinion of the Commission, will best improve the service in the interest of the public and the commerce of the people.

4. The power over car service means that the supply, movement, distribution, etc., of cars used in the transportation of property, including special types of equipment, are subject to the jurisdiction of the Commission.

Whenever the Commission is of the opinion that shortage of equipment, congestion of traffic, or other emergency requiring immediate action exists in any section of the country, the Commission is authorized to suspend the operation of any rules or practices established with respect to car service and make reasonable directions without regard to the ownership of cars during such emergency, as in its opinion will best promote the service in the interest of the public and the commerce of the people.

The Commission may require such common use of terminals as will best meet the emergency and serve the public interest; and may also give directions for preference or priority in transportation, embargoes, or movement of traffic under permits.

Section III

Value of Education

The Value of a Broad Education for Any Business.—So generally is the fact recognized that the more education a man has, the more efficient and desirable employee will he make, that everywhere, in all lines of trade, it is becoming a common thing to require of applicants for all sorts of positions, at least a high school education, and the standard for consideration of an applicant in an increasing number of organizations is a college education.

Practical, hard-headed business men would not make such requirements if experience had not taught them that a background of wide, general information on many subjects is a valuable asset in any employee, no matter what his allotted task may be. Situations are likely any minute to arise when some of this stored-up knowledge, seemingly so foreign to the task in hand, often proves really valuable. But beyond this, the habits of clear and logical thinking formed, and the power acquired to concentrate on the task at hand, which result from any honest effort to secure an edu-

cation, are factors that contribute a large share to efficacy and achievement in any man's work.

The modern young man, as never before, realizes the value of education as is evidenced by the thousands of young men who work all day, and spend their evenings attending Y. M. C. A. Schools, High Schools and Colleges, striving ever to fit themselves for higher and better positions. It is an inspiration to stand at night in front of one of the large high schools in a large city or visit the educational department of the Y. M. C. A., and observe the great number of young men so eagerly seeking for knowledge.

Definite Training for Definite Tasks.—Valuable as is the background of a thorough education along broad lines, and valuable as are the habits and powers developed in obtaining it, it goes without saying that a man must have definite training and much practice in order to become skilled in definite tasks. A high school or college graduate, other things being equal, is likely to make a better and more successful traffic manager than a man with only a grammar school education.

But there is no more royal road to success in this line to the high school or college graduate than to the grammar school graduate. Each must do hard work to master the subject, both in theory and in practice.

Lest the grammar school graduate should be discouraged by the fact that he has had so little

education, and therefore may not reach the top, let him remember that the old fable of the "Hare and the Tortoise" is often enacted in the business world, when some young man full of ambition pushes steadily upward toward a goal, while his swifter and more accomplished fellow-worker, confident in his superior ability, rests by the way.

A prominent traffic manager, who has a national reputation as a traffic expert, entered the employ of a large trans-continental line at the early age of 15 years, as an office boy. He attended night school and learned stenography. Within a short time he was given a stenographer's position and was promoted rapidly, becoming the private secretary to the General Manager. An opportunity to enter the traffic department of one of the largest industrial corporations in the United States came to him and he accepted. The position was not equal to the one he had, either financially or in prestige. He was only a clerk. But he continued to attend night school and by aid of the education thus obtained in conjunction with the practical experience acquired, both while with the railroad and in his daily tasks, he, while yet a young man, became the Traffic Manager of this large corporation. Today he is the President of one of its large branches. What a man thinks he can do, he can do.

Education Plus Practical Experience Expedites Success.—Every thoughtful man must admit that it is wise for him to secure all the education he

can as a preparation for any sort of life work, because the trained, educated mind grasps a subject and its technique much more quickly than an untrained mind, and consequently moves forward more rapidly to mastery of it all and to an honored place of responsibility. Two young men begin at the same time their business career in the traffic department of a large corporation. One is a graduate of a grammar school, and the other is a college graduate and has completed a traffic course. Both are ambitious to become a Traffic Manager. Both apply themselves earnestly and assiduously to the work, but the better trained mind gets a comprehensive knowledge in far less time than does the one whose education must come to him through the work alone. Training on the job, supplemented by knowledge and powers acquired through higher education, expedite the reaching of the desired goal.

Chapter 3

MODERN TRANSPORTATION AGENCIES

COLLATERAL READING: In the Freight Traffic Red Book—Traffic Abbreviations; Traffic Glossary; Interstate Commerce Act, Section 1.

Section I

Present-Day Freight Agencies

Modes of Carrying Freight.—The present-day agencies of transportation or modes of carrying freight are:

All-Rail,
Rail-and-Water,
All-Water,
Express,
Parcel Post,
Motor Truck,
Aeroplane.

All these agencies are used for the purpose of freight transportation in America except aeroplanes, which at present are used only for carrying mail; but undoubtedly they will soon be transporting freight. In foreign countries they are now being used to some extent as freight carriers.

Every man of average experience knows enough to describe each of these modes of freight transportation; but, in order that we may have clearly in mind what each agency stands for in the traffic

field, the following brief descriptions are necessary.

All-Rail Agencies. — All-Rail transportation covers the movement of freight entirely by railroad, and a larger tonnage is carried by this agency than by any other. The railroads divide tonnage into two classes: viz., *fast freight* and *slow freight.* The term "fast freight" as used by railroads includes perishable commodities and freight taking the higher classification ratings; the term "slow freight" includes commodities taking the lower classification ratings as well as most commodities for which specific commodity rates are established.

These terms, however, are often used by shippers for the purpose of indicating freight forwarded via standard lines and freight forwarded via differential lines (see paragraph following) or by water, the former being the "fast" freight and the latter being the "slow" freight. While the railroads do not guarantee the time when freight will reach its destination, they do operate fast freight trains which move on schedules, so that the time necessary for freight to reach destination on one of those trains may be reckoned with fair accuracy.

Rail-and-Water Agencies. — Rail-and-Water transportation is usually a cheaper but slower method than All-Rail. In domestic commerce Rail-and-Water transportation means via the Great Lakes, Coastwise Lines, Sound Steamers,

or the Panama Canal when they participate with the railroads in a continuous carriage of shipment under common control, management, or arrangement. The lines thus operated are usually termed Differential Lines, as they could not compete for traffic with All-Rail carriers at equal rates; therefore, they are permitted to make lower rates to induce patronage and thereby offset the better service offered by the railroads.

When freight is transported via Rail-and-Water, unless the tariffs containing rates covering this transportation specifically state that the rates include marine insurance while on the water lines, it should be covered by marine insurance, because the responsibility of the carrier is only that of a water carrier, under the Federal statutes, which is practically nil and is in no way similar to the liability assumed for All-Rail carriage. But if the rate includes insurance for transportation partly by water, the responsibility of the carrier is the same as if the property was transported wholly by rail.

All-Water Agencies.—The cheapest method of transportation is via All-Water, and a vast tonnage is carried by the water lines. The term All-Water means transportation service from port to port; that is, the shipment must originate at the port from which the vessel sails and be consigned for delivery at a port of destination.

The All-Water domestic routes are the Great Lakes, the Barge Canal (Erie Canal), the Coast-

wise Lines, the large rivers, and the Panama Canal. Freight can be transported via the Great Lakes and Barge Canal only during the season navigation is open. In the winter months transportation via these routes is suspended.

Steamship lines operating via the Panama Canal are strong competitors of the railroads for the Pacific Coast traffic and they furnish excellent service.

Freight transportation via All-Water should be covered by marine insurance. The necessity for marine insurance is on account of the fact that the statutes relieve owners of vessels from liability, to any extent, for goods that may be destroyed or damaged while in the possession of the vessel.

Express Agencies. — Express service is an agency of transportation in connection with the railroads and has the merits of safety, speed, and concentration of responsibility. The express companies accept packages of all kinds of merchandise, regardless of value, and assume full risk. In the large cities they collect packages from shippers, forward them usually on the same day on trains travelling at the rate of forty to sixty miles per hour, and deliver them to the street address of the consignees.

Parcel Post Agency.—Parcel Post is a Government agency, furnishing a convenient and efficient means of transporting small packages. The service reaches more places than any other trans-

portation agency, and the rates to nearby cities and towns are quite advantageous. The extent of the service is limited in respect to the size of the packages, the value of the commodities, and the quantity in which they may be forwarded.

When shipments are forwarded via this agency they must be delivered to the Post Office at the point of origin, but at destination they will be delivered at the street address of the addressee.

On the establishment of the Parcel Post service it was thought that it would replace, to a great extent, the service given by the express companies; but, while it has met with great favor and is largely used by many shippers of small packages, its service does not equal that given by the express companies.

Motor Trucks as Freight Carriers. — The motor truck is a rapidly growing agency of transportation and is becoming an increasingly desirable method of transporting certain classes of goods, where the distance of haul is not too great. Within the last few years operators of motor trucks have established regular routes and are becoming strong competitors of the railroads for short haul traffic. The operators arrange to call at shipper's address and transport the property direct to the desired delivery point without rehandling. While the cost of transportation is higher than that by rail, it is justified for the reason that the articles do not require extensive packing and boxing, as rail shipments do, and time of transportation is practically guaranteed.

Aeroplane Transportation.—Aeroplanes are used for transporting mail matter regularly, and a company now announces the establishment of passenger lines from New York to other cities. The aeroplane as a freight carrier is a likely future development.

Section II

Factors in Selecting Freight Carriers

Selecting the Right Carrier.—In selecting the carrier that would be the most practicable for handling the tonnage to or from territory tributary to water and rail routes, one should become familiar with the merits of the various systems and the differences in service. The factors to be considered are:

(a) Time,
(b) Cost,
(c) Nature of commodity,
(d) Competitive point,
(e) Rehandling,
(f) Distance.

When Time Is a Factor.—Perishable freight is transported by fast freight trains in cars especially built for that service, as time is essential. Frequently, perishable freight is forwarded via express. Urgent need for freight would also be an essential factor in selecting the fastest route.

Transportation Cost to Be Considered.—Cost is always an important factor in selecting a car-

rier. Where time is not essential, shipments are forwarded via the cheapest or differential route.

The Commodity Itself Limits Carrier Selection.—The nature of the commodity has a large bearing on the selection of the carrier. Low priced merchandise, bulk freight, unusually heavy articles, freight destined to competitive points, and the avoidance of transfers en route, are factors which must be considered in forwarding freight.

Where Competing Lines Are to Be Considered.—A competitive point is one reached by two or more carriers. If the competing carriers are all-rail lines, the rates for transportation are usually equal even though the line of one carrier may be more direct than that of another. If the competing carrier is a water line, or a rail-and-water line, the rate for transportation via these routes will be lower than the all-rail rate.

In the first instance the selection of the carrier will be governed by the proximity of either the shipper's or consignee's place of business to one of the competing lines; or the selection may be influenced by the better service accorded by one of the lines. In the second instance the selection will be governed by the nature of the commodity, and whether or not quick delivery is necessary.

The Question of Rehandling.—It is the desire of all shippers to avoid rehandling at transfer points on the lines of carriers, and they endeavor to forward their shipments direct to destination.

Direct loading of L. C. L. shipments, however, is frequently impossible and freight is forwarded via one or more transfer points. Many carriers endeavor to operate through cars to the large commercial centers, for handling L. C. L. shipments in order to avoid transfers.

Distance of Travel Modifies Choice.—The distance between the point of shipment and destination is a factor that must be considered when selecting a carrier. For a short distance, the motor truck is a preferable agency for transportation of certain commodities; and frequently for long distance transportation, water routes are preferable to all-rail. The selection of route, however, must be governed largely by the nature of the commodity to be transported.

Section III

Definitions: Carriers, Interstate, Intrastate

Common Carrier.—Any person or company that undertakes to transport property for pay when called upon to do so, whether by land or water, is a common carrier.

Private Carrier.—Any person or company that undertakes to transport property by special agreement is a private carrier.

Carriers Subject to Interstate Commerce Act.—All common carriers engaged in interstate com-

merce are not subject to the Interstate Commerce Act; only the carriers specifically named therein are subject to the Act.

There are a number of kinds of common carriers that are subject to the Interstate Commerce Act, but in this course we shall treat only of those engaged in the transportation of property wholly by railroad or partly by railroad and partly by water when both are used under a common control, management, or arrangement, for a continuous carriage of shipment; and also Express companies.

Intrastate Traffic.—Traffic having origin, destination and entire transportation within the boundaries of a state is intrastate traffic and is not regulated by the Interstate Commerce Commission, unless the rates, classifications, regulations, or practices cause unjust discrimination against interstate or foreign commerce. State laws are enforced by State Commissions generally designated as Public Service, Railroad, or Utility Commissions. It is necessary for a shipper engaged in intrastate traffic to ascertain the laws governing transportation in that particular State.

The transportation of property in the United States from port to port (freight originating at one port and destined to another port) by steamship companies in coastwise and inter-coastal trade, or on the Great Lakes, is also interstate traffic but is subject to the jurisdiction of the United States Shipping Board, a Federal body

which functions under authority of the United States Shipping Act and Merchant Marine Act, in a similar manner to the Interstate Commerce Commission.

The commerce of this country, however, is largely *interstate,* and it is far more essential for a shipper to acquire a knowledge of the Federal laws than of the State laws. Hence in that part of this course which treats of Domestic Traffic, we shall consider only interstate commerce.

Chapter 4

SHIPPING PAPERS

COLLATERAL READING: In the Freight Traffic Red Book—Traffic Abbreviations; Traffic Glossary; Bills of Lading Act; Standard Forms of Shipping Papers.

Section I

Bills of Lading

Varieties of Bills of Lading.—The Bill of Lading is a very important document. All shippers should be thoroughly familiar with the uses of this instrument and with the conditions printed thereon. It is a contract made between shipper and carrier, in which the latter agrees to transport goods for the former under certain specified conditions. If the shipper is not willing to accept those conditions, he may forward his goods at the carrier's risk, on payment of a higher rate; but this practice is not usual among shippers.

There are four kinds of bills of lading used in transportation, each serving a special purpose. They are:

Uniform Straight Bill of Lading.
Uniform Order Bill of Lading.
Uniform Live Stock Contract.
Uniform Through Export Bill of Lading.

The last one named will not be discussed until we reach that part of the course devoted to Ocean

Transportation. The others will need examination now.

Straight Bill of Lading.—For ordinary domestic freight traffic the Straight bill of lading and the Order bill of lading are used. In a Straight bill of lading it is stated that the goods are consigned or destined *to a specified party.* This document is not negotiable and the words "Non-Negotiable" must be printed or written thereon. On delivery of merchandise to carrier for transportation, this bill of lading is signed by the receiving clerk and is the shipper's receipt for the goods. The Straight bill of lading is used for the large majority of shipments.

Order Bill of Lading.—There are four distinguishing features about an Order bill of lading; namely,

1. The goods are consigned to the order of the party named in the bill of lading.

2. The name and post office address of the party to notify on arrival of the consignment must always be written on the bill of lading.

3. The Order bill of lading is a negotiable document, and as such may be used for several purposes. It is most frequently used when shippers desire to collect for the value of shipments prior to delivery, and is similar to C.O.D. transactions. The railroads will not accept shipments for C.O.D. delivery, so the Order bill of lading must be used when shippers desire payment prior to delivery of goods forwarded by freight. When

this method of shipment is employed, shippers usually consign the freight to their own order, and after bill of lading is signed by the agent of the railroad it is forwarded, with invoice and draft attached, through the bank in which the shipper deposits, to be delivered to the purchaser of the goods against his acceptance of the draft.

4. For the purpose of making the Order bill of lading readily distinguishable from all other bills of lading, it is printed on yellow paper. The Memorandum bill of lading and the Shipping Order are printed on blue paper.

This method of forwarding also enables shippers at distant points to collect from the home bank the value of the consignment, as soon as the bill of lading is properly signed. Many shippers would be unable to finance their business without this method of quick collection for goods shipped. The use of an Order bill of lading does not cause any reflection on the credit of the party who negotiates the document, and frequently order shipments are made to industries of the highest financial standing. For instance, a shipper of flour in the West, or a shipper of fruit on the Pacific Coast, may forward large quantities of his goods to the East, consigning the shipments to his own order. On obtaining signed bill of lading from the railroad agent he sends it to the bank with which he transacts business and attaches thereto the invoice for the value of the freight

covered thereby, together with a draft for the amount of invoice and this amount less discount is then credited to his account.

Live Stock Contract.—Instead of the uniform bill of lading, the Live Stock Contract is a form used by carriers in the Official Classification territory for shipments of live stock. It also contains a contract with the man or men in charge of the shipment. This document is not negotiable.

Exchange Bill of Lading.—An Exchange bill of lading is simply a regular bill of lading issued in exchange for another. When a shipment has been accorded a change in destination, name of consignor, or name of consignee, en route, in accordance with a diversion tariff, and it is desired to obtain the through rate applicable via the point of diversion, an Exchange bill of lading may be issued.

This Exchange bill of lading must indicate clearly that it is an Exchange bill of lading, and the date and number of the document for which it is exchanged and the name of the station at which the original document was issued must be shown thereon. The usual purpose for this action is to conceal the name of the original shipper from the ultimate consignee.

In cases of diversion, if Exchange bills of lading are not desired, an endorsement, in lieu of exchange is inserted on the original document.

Memorandum Bill of Lading.—The Memorandum bill of lading is simply a *duplicate* of a bill of lading and is retained by shippers for record purposes. Carriers frequently sign this document, on request, and write on it the word "duplicate."

Shipping Order.—The Shipping Order is a duplicate of the bill of lading. It is retained by the carrier and a waybill is made from it after the weight of the freight covered thereby together with route and rate have been noted thereon by different railroad clerks.

Section II

Other Transportation Documents

Forms for Special Purposes.—In addition to the shipping papers described in Section I, there are several documents used for special purposes in transporting freight. They are:

The Waybill.
Notice of Arrival.
Freight Bill.
Delivery Receipt.
Indemnity Agreement.
Bond of Indemnity.

Waybill.—It is the practice of some of the large railroads to have the billing agent, in one typing, make out the Waybill, Memorandum Freight Bill, Freight Bill, Delivery Receipt, No-

tice of Arrival, and copy of Waybill. A copy of the Freight Bill is retained for his records; and, on interline business, the copy of Waybill is forwarded to the auditor. The balance of the papers are sent to the delivery agent to await arrival of freight.

Notice of Arrival.—On arrival of freight at destination, notice is promptly sent or mailed to the consignee. This notice shows number of packages, description of articles, route, rate, weight, and amount of freight charges; also the station where delivery may be obtained, and the time allowed for removal before storage charges will begin.

Freight Bill.—There are two kinds of Freight Bills; viz., a Freight Bill showing the amount of charges, if collected at destination, and a prepaid Freight Bill, which is given to shipper on prepayment of the amount of charges shown thereon.

On surrender of arrival notice, or bill of lading, and payment of charges (if collect), it is receipted by cashier and given to consignee together with an order for delivery. If charges are prepaid, Freight Bill reading "prepaid" is given to consignee with the delivery order.

Delivery Receipt.—The Delivery Receipt is turned over to the delivery clerk, who obtains the consignee's signature thereon after delivery of the articles named therein and surrender of the cashier's order.

Indemnity Agreement.—There are two forms of the Indemnity Agreement (sometimes called Letter of Indemnity). One form is required by railroad freight claim departments when a claimant is unable to furnish in support of claim a paid freight bill, or original bill of lading. The other form is used to indemnify the railroad company for delivery of an "Order" consignment without surrender of original bill of lading, properly endorsed, and must be secured by the deposit of a certified check for 125 per cent of the invoice. Under this agreement this check is retained by the carrier as security until surrender to the delivering carrier of the original bill of lading properly endorsed, or until acceptance by the treasurer of the delivering carrier of a surety bond in accordance with the requirements of that carrier.

Bond of Indemnity.—A Bond of Indemnity is a surety given to a transportation line to indemnify it against all claims or liability, for any action on its part for which it might be legally liable. It is generally used when an "Order" bill of lading has been lost or delayed, and usually when shippers desire to stop delivery or divert a consignment. This bond must be for twice the amount of the invoice value of the property. The party executing the bond agrees to deliver to the delivering carrier the original bill of lading properly endorsed when the same be had or found; then the obligation will be void; otherwise the bond will remain in full force and effect.

Section III

The Law Governing Bills of Lading

Bills of Lading Act.—This Congressional Act relates to bills of lading in interstate and foreign commerce, when issued by any common carrier for the transportation of goods in interstate commerce, as defined in Section 1 of the Interstate Commerce Act. The Act should be carefully read, as it is the law governing the use of the bill of lading. The important provisions of the Act are as follows:

(a) Section 2 defines a Straight bill of lading, and in Section 6 it is specified that this bill of lading is *not negotiable.*

(b) Section 3 defines an Order bill of lading, states that it *is negotiable,* and that nothing shall affect its negotiability except an agreement in writing upon its face signed by the shipper.

(c) Section 8 provides that the carrier shall deliver goods on demand of the consignee named in a Straight bill of lading, or on demand of the lawful holder of an Order bill of lading, properly endorsed, on surrender thereof; and that, when goods are delivered, the lawful holder of the Order bill of lading shall sign an acknowledgment of their receipt.

(d) Section 9 states to whom the carrier is justified in delivering goods.

(e) Section 10 defines an unlawful delivery on the part of carrier, and Sections 11 and 12

define the liability of carrier for failure to deliver goods or any part thereof.

(f) In Section 13 it is provided that any alteration of a bill of lading, without authority, after it is issued shall be void; and that, in such a case, the bill of lading shall be enforceable according to its original tenor.

(g) Sections 20 and 21 define the liability of carrier, when goods are loaded by carrier and when loaded by shipper, respectively.

(h) Section 22 defines very explicitly the liability of the carrier, whose authorized agent has issued a bill of lading for goods to be transported in interstate commerce. This section makes the carrier liable to the lawful holder of an Order bill of lading, who has given value in good faith, relying on the description of the goods in said bill of lading, for damages caused by the non-receipt by the carrier of all or any part of the goods or their failure to correspond with the description thereof in the bill of lading. This Section is very important because it will be observed that the carrier is not only responsible for the quantity shown on the bill of lading, but he is also responsible if goods are not as described in the bill of lading.

(i) Section 28 provides that an Order bill of lading may be negotiated by the person to whose order the goods are consigned, with an endorsement in blank or to a specified person. If endorsed to a specified person, it may be negotiated again by the endorsement of such person in blank

or to another specified person. Subsequent endorsement may be made in like manner.

For illustration, a shipment is consigned to

Order John Roe,
Notify John Doe,
500 *Broadway,*
New York, N. Y.

To properly endorse the bill of lading in blank, the endorsement should simply read *John Roe,* but if endorsed to a specified person it should read: *Deliver to John Doe,* or *Deliver to Order of John Doe.* John Doe could then endorse the bill of lading either in blank or to the order of John Smith, and subsequent endorsement could be made in like manner.

Chapter 5

FREIGHT CLASSIFICATIONS

COLLATERAL READING: In the Freight Traffic Red Book—Freight Classification.

Section I

The Development of Classification

Importance of Classification.—There are many thousands of kinds of commodities transported by railroads and it is plainly evident that it would not be practicable, even if it were possible, for the carriers to publish a separate rate for each commodity. Therefore, the railroad companies divide all known commodities into groups or classes and publish rates applicable to the different classes.

In his book, "Railroad Rates and Regulations" (which is suggested as a good book to road), W. Z. Ripley, in discussing Classification, says:

"A few of the delicate questions which have puzzled the Interstate Commerce Commission may give some idea of the complexity of the problem, for example:

"Are iron-handled bristle shoe-blacking daubers machinery or toilet appliances? What is the difference, as regards railway carriage, between a percolator and an every-day coffee pot? When is a boiler not a boiler? If it be used for heating purposes rather than steam generation, why is it not a stove? What is the difference between raisins and other dried fruits?"

The Classification of all these articles is a factor of primary importance in the making of freight rates both from a public and private point of view.

Theoretical Basis of Classification.—On the basis of economic theory the justification for a differentiation of charges between various classes of commodities may be considered primarily from two distinct points of view:

The first is that on operation, which determines cost.

The second is the value of the service as related to the value of the commodity.

Some of the factors which justify differences in ratings were well put by the Interstate Commerce Commission in 1897, as follows:

> Whether commodities were crude, rough, or finished; liquid or dry; knocked down or set up; loose or in bulk; nested or in boxes, or otherwise packed; if vegetables, whether green or dry, desiccated or evaporated; the market value and shippers' representations as to their character; the cost of service, length and direction of haul; the season and manner of shipment; the space occupied and weight; whether carload or less-than-carload lots; the volume of annual shipments to be calculated on; the sort of car required—whether flat, gondola, box, tank, or special; whether ice or heat must be furnished; the speed of trains necessary for perishable or

otherwise rush goods; the risk of handling, either to the goods themselves or to other property; the weights, actual and estimated; the carrier's risk or owner's release from damage or loss.

Phases of Classification Development.—The practice of classifying freight has been in effect for a very long time. At first freight was very crudely classified as light and heavy articles, the charges being assessed on the light weight articles by the cubic foot and on the heavy ones by weight. The Louisville & Nashville Railroad originally divided freight into three classes: viz., bulk freight, heavy freight, and live stock. It soon developed, however, that there was a great increase in the volume of traffic and in the diversity of articles offered for transportation, hence more elaborate classifications became necessary.

During the first fifty years of railroad development each railroad issued its own classification and in 1887 when Congress enacted the Interstate Commerce Act there were about 130 different classifications in effect. At that time it was impossible for a shipper, unless he was a rate expert, to determine in advance of shipment what the rate would be or what rates were paid by his competitors.

The natural growth of Classification, in a rapidly growing country like ours, has manifested itself in three distinct ways; namely, in

1. A continuous increase in the number of items of freight separately enumerated.

2. A growing distinction in rates between C.L. and L.C.L. shipments.

3. A steadily enlarging volume of special rules and descriptions.

There were about 1,000 commodities enumerated in the East in 1886. The first Official Classification in the following year increased the number of items to 2,800; by 1893 there were twice that number. In 1915 there were approximately 5,800. The number now contained in the Consolidated Classification has undoubtedly been increased by the consolidation of the three Classifications.

Distinction Between C.L. and L.C.L. Classification Ratings.—The natural tendency in the development of Classification is an increase in the number of separate ratings for large and small shipments. The fundamental justification for lower ratings on C.L. than L.C.L. is the economy in use of equipment, terminal expense, and clerical detail. The normal growth of trade means an increase in the number of separate carload rates and the increase in the number of separate carload ratings conforms territorially to the growth in the volume of trade.

Just before the passage of the Act to Regulate Commerce, there was no distinction between carload shipments and small lots, in 85 per cent of the articles enumerated.

A sudden change supervened in the first Official Classification issued after the Federal Act. The number of C.L. ratings was suddenly raised to 900, provoking a storm of protest from eastern shippers, who resented this advantage to jobbers in the West and South, because it enabled the latter to buy their supplies directly at wholesale. Yet, notwithstanding this protest, the number of separate C.L. ratings was steadily augmented year after year. By 1893 more than half the articles enumerated in the Official Classification were allowed a lower rate for large shipments. Today the majority of commodities which move in carloads are given a carload rating.

Section II

Classification Territories and Ratings

The Three Classifications.—Classification Territories are known as the Official, the Southern, and the Western Territories.

The Official Classification applies to traffic within the region north of the Ohio River and the line of the Norfolk and Western R. R. into Norfolk, Va., including New England and the territory east of the Mississippi River, except Minnesota, Wisconsin, and the northern peninsula of Michigan.

The Southern Classification is in force in the region south of the Official Territory and east of the Mississippi River.

The Western Classification covers the northern peninsula of Michigan, the states of Wisconsin and Minnesota, and the rest of the United States west of the other two territories.

The Official Classification contains six numbered classes and two rule classes. The Southern Classification contains six numbered classes and four lettered classes. The Western Classification contains five numbered classes and five lettered classes. Each Classification, however, contains multiples of first class progressing from one and one-quarter times first class up to four times first class.

Classification Governing Between Territories. The rates contained in a tariff are always governed by one Classification and the name of the Classification governing is shown on the title page.

If a Joint Tariff contains Through Rates from points in one Classification Territory to points in another, the governing Classification may be the Classification for the Territory of the points of origin or the Classification for the Territory of the points of destination. There is no fixed rule as to which Classification shall govern; but when the Joint Rates are established the governing Classification is determined. The components of Combination Rates from points in one Classification Territory to points in another are generally governed by the respective Classifications; that is, each component is governed by the Classification for the Territory in which it is effective.

Classification Committees.—These committees are appointed by the carriers. Their duty is to fix the rating which is to be assigned to the several articles embraced in the respective Classifications, and to determine the general rules and regulations.

The Classification, however, is always subject to whatever exceptions any railroad or group of railroads may choose independently to put in force. These exceptions are, in many cases, published in the Freight Tariffs to which they apply and sometimes in a separate publication.

At the present time, freight Classification for all the carriers of the United States is performed mainly by three committees known as the Official, the Southern, and the Western Committees.

Practicable Classification.—As actually effected in practice, Classification of freight seems to have been largely ascertained by experience as to operating cost and value of service.

The object sought has, in the main, been to establish ratings which will move the largest amount of business at profitable rates.

The present procedure of classification committees, when reviewing ratings, is to make an exhaustive research in order to determine with accuracy all of the elements which are recognized as affecting the rating.

The same commodity is often placed in two or three or even more classes, according to the man-

ner in which the goods are packed and otherwise prepared for shipment.

Uniform Classification.—Efforts have been made, owing to persistent demand, to unify the several Freight Classifications and to substitute for them a single Uniform Classification.

There are two great obstacles incident to the substitution of a single Uniform Classification; namely: Our vast territories and the extreme diversity of agricultural and industrial conditions.

The merits of a Uniform Classification are quite numerous. A Uniform Classification would be most desirable because it would enable producers to know actually what would be the cost of getting their commodities to market and how much they would have to pay for supplies brought to them by the railroads. It would also make it easier for shippers to detect discriminations.

A permanent committee has been appointed for the purpose of preparing a Uniform Classification. Undoubtedly their efforts will meet with success, although the difficulties in the way of a Uniform Classification seem almost insurmountable.

Consolidated Classification.—At the present time, there is one Major Classification called the Consolidated Classification, which constitutes a consolidation of the three large Classifications—the Official, the Southern, and the Western. This Classification contains rules and ratings for the

Official, the Southern, and the Western Classification Territories; there being almost entire uniformity in the rules, commodity descriptions, and minimum C.L. weights and uniformity, also, in many ratings, particularly in the higher classes.

The Consolidated Classification is a valuable step forward toward a Uniform Classification. Its merits are quite apparent when it is desired to determine rates for shipments moving through different Classification Territories because it is necessary to consult only one publication instead of two or three as was formerly necessary.

Exception Sheet and Tariff Rules.—An Exception Sheet is a publication containing Classification ratings and rules different from those contained in a Major Classification. When both the Classification and the Exception Sheet are referred to in a Tariff, as governing the rates published therein, the Ratings, Rules, and Regulations published in the Exception Sheet take precedence over any contained in the Classifications, except as may be otherwise specifically stated.

Frequently Tariffs are issued which contain only a few exceptions to the Classification and these exceptions are shown in the Tariff itself. Often, however, the exceptions to the Classification are so numerous that the carrier publishes a separate Tariff containing its exceptions to the Classification. In the large agency Tariffs it is usually stated in the governing rules that the rates named are governed by the exceptions to the Classifica-

tions of the individual carriers as listed. Therefore, in obtaining rates from a Tariff containing a rule of this kind, it is necessary to consult the exceptions to the Classification of the individual carrier over whose line shipment is to be forwarded provided it is listed in the Tariff as having published an Exception Sheet.

The Exception Sheet may provide for a different style of package; or perhaps it may authorize exceptions on shipments of estimated weight for a package rather than actual weight; or it may arrange for a different class, generally one lower than that authorized in the Classification; but whatever is specified is a part of the rate and must be quoted if authorized. However, the Rules and Regulations published in a Tariff take precedence over any conflicting Rules and Regulations contained in either the Classification or Exception Sheet, by which the latter is governed unless otherwise specifically stated.

State Classifications.—Certain states have Classifications for intrastate traffic and the three great Classifications are supplemented, or displaced by others. In Florida, Georgia, Illinois, Texas, Virginia, and some other states, Classifications applicable only to intrastate traffic have been established. Some of the states, particularly Illinois, have interesting and excellent Classifications, but in handling interstate traffic it is necessary only to consult the Consolidated Classification. Shippers located in states having state Classifications must

be familiar with these publications in order to handle their intrastate business.

Requests for Changes.—One of the important duties of a traffic manager is to obtain Classification adjustments. If, in his opinion, the Classification rating of a commodity handled by the concern he represents is unjust, unreasonable, or discriminatory, forms of application for a change in rating or for a rating on a commodity not indexed by name in the Classification may be obtained from the respective Classification Committees. These forms should be filled out correctly and an opportunity for a hearing is usually afforded the petitioner when he can make oral argument in support of his petition.

Chapter 6

INTERPRETATION OF CLASSIFICATION RULES 1 TO 13

COLLATERAL READING: In the Consolidated Classification—Rules 1 to 13.

The Skeleton Classification.—One of the essential qualifications for a traffic man is that he should be thoroughly familiar with the Rules of the Consolidated Classification, particularly those rules which refer to the commodities of the industry in which he is engaged.

Every student should have a copy of the Consolidated Classification and should understand its construction.

In solving many of the problems given in this course of instruction, it will be necessary for the student to understand how to interpret the Classification in order to determine the correct Ratings.

At the top of each page containing the list of commodities for which ratings are furnished, and over the rating columns, are shown the Classifications which govern; viz., Official, Southern, and Western.

Interpreting the Rules.—An illustration of correct interpretation is as follows: If a shipment is destined to a point in the Southern Classification Territory, say Memphis, Tenn., the tariff

applicable should be consulted to ascertain the governing Classification, which would be the Southern Classification. In the column under the heading "Southern" would be found the rating.

In order that you may quickly gain some degree of facility in interpreting, this Chapter and Chapter 7 will be devoted to Interpreting the Classification Rules.

Rule 1. Bill of Lading Conditions.—(a) This rule provides that when property is transported subject to the provisions of the Consolidated Classification the acceptance and use of the Uniform Bill of Lading are required. Under the Uniform Bill of Lading, the liability of the carrier is specifically limited below the liability of the carrier under the common law and the Federal and State statutes applicable thereto. The shipper has the option of refusing to ship under the Uniform Bill of Lading conditions and, by paying a rate ten per cent higher, he may ship property at carrier's risk as defined by common law. By allowing this option to shippers the carriers are permitted to limit their liability, which they could not do otherwise.

(b) When the terms of the bill of lading contract are modified, a notation to that effect is made on the face of the bill of lading, which must be signed by the agent of the carrier.

(c) As the Classification covers some movements over routes which are partly rail and partly water or over water lines entirely, the rule pro-

vides that the marine risk is not assumed unless the tariff so provides.

Rule 2. Penalties for False Representation.—(a) This rule quotes in part Section 10 of the Interstate Commerce Act, which prohibits false classification, weighing, or any other device whereby the shipper willfully attempts to defraud the carrier. The maximum penalty for a violation of this section upon conviction is a fine of $5,000 and two years' imprisonment.

(b) On the other hand, merchandise is frequently improperly packed or described through carelessness or negligence, and the carriers have inspectors whose duties are to examine shipments to determine that they are correctly billed, to increase the charges if error is found, and to call shipper's attention to the matter.

Rule 3. Acceptance of Freight. — This rule provides against the acceptance of articles of extraordinary value; such as, currency, valuable papers, jewelry, etc. These should not be shipped by freight, but by express transportation or registered mail.

Rule 4. Undesirable Freight. — Under this rule, carriers reserve the right to refuse certain freight, which is liable to impregnate or otherwise damage equipment or other freight, or they can accept such freight at certain periods.

Rule 5. Freight Must Be in Specified Form.—This rule provides that freight tendered for trans-

portation must be in the form as specified in the separate description of articles assigned to the various classes in the Classification. Rules 40 and 41 contain definitions of containers and elaborate specifications for the construction of barrels, boxes, and other containers, so as to comply with the specific regulations, and thereby afford a safe package for transportation by the carriers.

Section 3, of this rule, provides that when the containers and packing of articles received for transportation do not comply with the specifications of Rule 40, the rating on the articles would be one class higher, and when articles are received in containers of a kind, the use of which is not specifically provided in the description, quite severe penalties are inflicted by increased ratings, but this Rule cannot be used as a basis for quoting rates in advance of shipping.

Examples:

1. Articles in crates would take one class higher than in barrels or boxes, whichever is the higher.
2. Articles forwarded in pails, kits, or tubs would take two classes higher than in barrels or boxes, whichever is the higher.
3. Articles forwarded loose would take three classes higher than barrels or boxes, whichever is the higher.

Rule 6. Marking. — (a) This rule provides that less than carload freight must be marked *exactly* as consigned in the bill of lading, and gives

details as to the method of marking. While transportation companies require their agents to compare the shipping ticket with the marks on packages and to call upon the shippers for correction, when a discrepancy between the two is found, this does not relieve the shipper of the responsibility of marking packages in accordance with the shipping ticket. Improper marking is directly responsible for the majority of stray packages.

(b) When a shipment is consigned "To Order" it must be so marked, and it must be further marked with an identifying symbol or number, which must be shown on the shipping order and on the bill of lading.

(c) When second-hand cases or goods are reshipped, all old marks must be removed or obliterated.

(d) It is unnecessary to mark freight shipped in carload quantities, but freight in excess of full cars must be marked as required for less than carload freight, except when such excess is 20,000 pounds or more. However, if a carload shipment is to be transported by water in part of its journey, each package should bear distinguishing marks so that it may be identified in case of separation from the remainder of the shipment

(e) All special marks and numbers must appear in the bill of lading.

(f) It is also permissible to show such special marks as "Glass," "Keep Dry," "This Side Up," "Handle with Care," etc.

Rule 7. Consignment of Freight. — This rule provides that the name of only one shipper, one consignee, and one destination shall appear in the bill of lading, unless the shipment is consigned to order of the shipper or some other party; in which event the name of the party to be notified upon arrival at destination may be shown.

In any event, all this information, except the name of shipper, which is shown on the bill of lading, must be shown on packages when forwarded in less-than-carload quantities. However, it is always advisable, in forwarding a straight consignment, to have the name and address of shipper marked on the packages.

This rule permits showing in bill of lading the points at which shipments are to be stopped in transit when such stoppage is authorized by the carrier's tariffs.

When an "Order" bill of lading is lost or delayed the property may be delivered upon receipt by the carrier's agent of a certified check for an amount equal to 125 per cent of the invoice value of the property, or at the carrier's option, upon the receipt of a bond for twice the amount of the invoice value of the property, or the carrier may accept a blanket bond. The latter arrangement is sometimes made by large receivers of "Order" shipments in order to avoid delay in delivery, but the surety, amount and form of the bond must be satisfactory to the carrier.

Rule 8. Advance Charges. — Under this Rule the carriers must not pay the shippers, or their draymen or warehousemen, any charges and carry those charges forward on their billing to be collected from the consignee.

Rule 9. Shipments Not Worth Charges.— When in the judgment of the agent at point of shipment the property would not at forced sale realize the charges, a prepayment of the charges must be made or payment guaranteed.

Rule 10. Mixed Carloads.—This Rule is very complex and it is quite difficult to understand. Without question a whole chapter could be written in explanation of its different provisions.

Under this Rule, except as otherwise provided, a number of different articles for which carload ratings are provided may be forwarded in one car by one consignor to one consignee and destination at the carload rate applicable to the highest classed article, and at the highest carload minimum weight provided for any of the articles.

Section 3 of this Rule provides that when the aggregate charge upon the entire shipment is made lower by considering the articles as if they were divided into two or more separate carloads the shipment will be charged accordingly, as follows:

(a) Under the Official Classification, the charges on each separate carload will be based upon the carload rate applicable to the highest classed article therein, and the highest carload

minimum weight provided for any of the articles therein.

(b) Under the Southern and Western Classifications, the same provisions apply, except if one of the carloads is subject to a commodity rate, the carload minimum weight applicable to that rate will apply on such carload.

An illustration of paragraph (a) is as follows:

A shipment from New York City to Minneapolis, Minn., consisting of:

	Actual Weight	Minimum C.L.Wt.	Rating L.C.L.	Rating C.L.
100 bdls. Sand Paper	20000 lbs.	36000 lbs.	3	5
100 bxs. Steel Tacks	15000 lbs.	36000 lbs.	4	5
50 crts. Oilcloth	15000 lbs.	30000 lbs.	2	4
65 bxs. Twine	13000 lbs.	30000 lbs.	3	4

would be billed thus:

35000 lbs. as 36000 lbs. @ 78c per 100 lbs. $280.80
28000 lbs. as 30000 lbs. @ 90c per 100 lbs. 270.00

Total.....$550.80

The second, third, fourth and fifth class rates from New York City to Minneapolis are 169½c, 129c, 90c, and 78c respectively. If these commodities were billed at actual weight at the L.C.L. rate, charges would be:

33000 lbs. @ 129c per 100 lbs. $425.70
15000 lbs. @ 169½c per 100 lbs. 254.25
15000 lbs. @ 90c per 100 lbs. 135.00

Total.....$814.95

If the shipment was billed at the total actual weight at the C.L. rate for the highest classed article, charges would be:

63000 lbs. @ 90c per 100 lbs.....$567.00

An illustration of paragraph (b) is as follows:

A shipment from Chicago, Ill., to San Francisco, Calif., consisting of:

	Actual Weight	Minimum C.L.Wt.	Rating L.C.L.	Rating C.L.
50 bxs. Auto T'k R'ks	12000 lbs.	30000 lbs.	2	A
50 bxs. Auto Steel Hubs	16000 lbs.	30000 lbs.	3	A
50 bxs. Shock Absorbers	15000 lbs.	30000 lbs.	2	4
50 crts. Bumper Guards	14000 lbs.	30000 lbs.	2	4
60 bxs. Auto Tire Ch's	24000 lbs.	30000 lbs.	2	4

would be billed thus:

29000 lbs. as 30000 lbs. @ 311c per 100 lbs. $933.00
28000 lbs. as 30000 lbs. @ 266c per 100 lbs. 798.00
24000 lbs. as 40000 lbs. @ 173c per 100 lbs. 692.00

Total.....$2423.00

The second, third, fourth and class A rates are: 443c, 367½c, 311c, and 266c respectively. Automobile Tire Chains, however, are assigned a specific commodity rate from Chicago to San Francisco of 173c per 100 lbs. in the Trans-Continental West-bound Tariff, minimum carload weight 40,000 lbs. Therefore, the commodity rate and minimum carload weight of 40,000 lbs. are used.

The Classification minimum weight for Automobile Tire Chains is 30,000 lbs. and if the actual weight of the Tire Chains was added to the other

two fourth class articles, the total weight of the three articles would be 53,000 lbs., and if billed on this basis charges would be:

53000 lbs. @ 311c per 100 lbs.		$1648.30

The charges as billed above are:

4th Class Articles	$933.00	
Commodity Rate Article	692.00	
Total	$1625.00	1625.00
Therefore the charge is lower by		$23.30

If the entire shipment was billed at actual weight at the C.L. rate for the highest class article, charges would be:

81000 lbs. @ 311c per 100 lbs.	$2519.10

If these commodities were billed at actual weight at the L.C.L. rate it is plainly evident that charges would greatly exceed the above amounts.

Section 4 of this Rule provides an exception that, when the aggregate charge upon the entire shipment is less on the basis of carload rate and minimum C.L. weight for one or more of the articles, and on actual weight at L.C.L. rate or rates for the other articles, the shipment will be charged for accordingly. This section, therefore, renders it permissible to load L.C.L. lots of different classes with a C.L. lot under certain conditions without penalizing the C.L. shipment.

To illustrate the application of Section 1 and Section 4, the following examples are given:

Section 1:

If a shipment consisted of:

	Actual Weight	Minimum C.L.Wt.	Rates L.C.L.	C.L.
Linoleum	24000 lbs.	30000 lbs.	124½c	66c
Writing Paper	4000 lbs.	30000 lbs.	124½c	47½c
Brass Nails	1000 lbs.	30000 lbs.	94½c	66c

and was forwarded by one shipper in New York to one consignee in Chicago, the charges would be as follows:

29000 lbs. as 30000 lbs. @ 66c per 100 lbs.....$198.00

If the aggregate charge on this shipment was lower on the basis of the C.L. minimum weight for the Linoleum at the C.L. rate and on the basis of actual weight at the L.C.L. rates for the other articles, that amount would be the charge assessed as authorized in Section 4. On this basis charges would be as follows:

Linoleum and Brass Nails are each assigned a rating of 4th class in the Classification with a minimum weight of 30,000 lbs.; therefore the weights of the Linoleum and Brass Nails would be combined and shipment would be billed:

25000 lbs. as 30000 lbs. @ 66c per 100 lbs. $198.00
4000 lbs. @ 124½c per 100 lbs. 49.80

Total.....$247.80

It will be observed that the correct charge on this shipment is in accordance with the provisions of Section 1 because the application of that Section makes a lower charge.

Section 4:

If a shipment consisted of:

	Actual Weight	Minimum C.L.Wt.	Rating L.C.L.	Rating C.L.
C'ed Tomatoes in boxes	32000 lbs.	36000 lbs.	3	5
B'k'g P'der in glass, boxed	2000 lbs.	30000 lbs.	1	3
Chocolate, boxed	1500 lbs.	30000 lbs.	2	3

it would be billed thus:

The 1st, 2nd, 3rd, and 5th class rates, New York to Chicago, are 142c, 124½c, 94½c, 56½c, respectively.

32000 lbs. as 36000 lbs. @ 56½c per 100 lbs.	....	$203.40
2000 lbs. @ 142c per 100 lbs.	....	28.40
1500 lbs. @ 124½c per 100 lbs.	....	18.68
Total	.....	$250.48

If the charges on this shipment were based on the provisions of Section 1 they would be as follows:

The highest C.L. rating is 3rd class, and the highest minimum weight is 36,000 lbs., therefore the shipment would be billed:

35500 lbs. as 36000 lbs. @ 94½c per 100 lbs. $340.20

It will be observed that the aggregate charge on this shipment would be in accordance with the provision of Section 4 because the application of that Section makes a lower charge.

Rule 11. Weights.—Under this rule, the principle is provided that all freight is chargeable at gross weights. Usually there are three weights: the net, the tare, and the gross; the tare representing the empty package, barrel, or bag. Of

course, where *estimated* weights are provided in the Classification, these take precedence over *actual* weights; and where shipments are forwarded in carloads the minimum weight is used when the actual does not exceed it.

Rule 12. Classification of Articles Taking Different Classes.—(a) Under this rule, a small lot of freight of different classes, packed separately, will be taken at actual weight and at the class rate for each article, provided the aggregate charge for the shipment is less than the minimum for the highest classed article.

(b) Packages containing articles of more than one class will be charged for at rates applicable on the highest classed article.

An illustration of the application of section (a) of this rule would be as follows:

If a commodity weighing 40 lbs., rated at first class, and another commodity weighing 300 lbs., rated at third class, packed in separate containers, were shipped to one consignee on the same bill of lading, the third class shipment would be charged at actual weight and third class rate, while the first class shipment would be charged at the actual weight and first class rate. That is, if the first class rate is $1.50 and the third class rate $1.00, the freight bill would read as follows:

300 lbs. at $1.00	$3.00
40 lbs. at 1.50	.60
Total	$3.60

An illustration of section (b) of the rule:

If these two commodities were packed in the same container, the first class rating would apply to the entire shipment and the bill would be rendered like this:

340 lbs. at $1.50 per 100 lbs.....$5.10

Rule 13. Minimum Charge.—(a) Under this rule, the minimum charge on L.C.L. shipments will be 100 pounds at the class or commodity rate applicable thereto. On articles classified higher than first class, the minimum charge will be for 100 pounds at the first class rate. Tariffs naming specific rules as to minimum charge will take precedence over this rule, but in no case will the charge be less than 50 cents.

(b) When an L.C.L. shipment moves under a rate made by a combination of separately established rates, whether each component is governed by the same or different Classifications; i.e., by Official, Southern, or Western Classifications, the minimum charge of 50c will apply to the continuous through movement and not to each of the factors.

(c) The minimum charge for C.L. shipments is $15 per car, but this rule does not apply to charges for switching service, nor to certain articles specifically named in the Classification. The same provisions that govern L.C.L. shipments moving under combination rates apply to C.L. shipments, except the minimum charge for a C.L. is $15.

An illustration of section (a) of this Rule is as follows:

The first class rate, New York to Chicago, is 142c per 100 lbs. A shipment weighing 60 lbs. rated at first class would be billed:

60 lbs. as 100 lbs. @ 142c per 100 lbs.....$1.42

A shipment weighing 60 lbs. rated at one and a half times first class would be billed:

60 lbs. as 100 lbs. @ 142c per 100 lbs.....$1.42 because 1½ times first class, or $1.28, is less than the minimum charge of first class.

A shipment weighing 60 lbs. rated at 2½ times first class would be billed at actual weight thus:

60 lbs. at 355c per 100 lbs.....$2.13

because the charge thus determined is greater than the minimum of first class.

A shipment of 60 lbs. rated at 30c per 100 lbs. would be billed at the minimum charge thus:

60 lbs. for 50c

Under Section (c), a commodity entitled to a carload minimum weight of 12,000 lbs. and entitled to a rate of 12c per 100 lbs. would be billed:

12,000 lbs. for.....$15.00

The amount of charges on the basis of the rate applicable is $14.40, but the minimum charge for a car load will be made.

Chapter 7

INTERPRETATION OF CLASSIFICATION RULES 14 to 41.

COLLATERAL READING: In the Consolidated Classification—Rules 14 to 41.

Know the Rules.—This lesson is a continuation of the interpretation of the Classification Rules. Again we desire to emphasize the importance of this particular branch of study; for, having correct knowledge of these rules, many errors and consequent claims will be avoided. Also by utilizing this knowledge and complying with the Rules, Regulations, and Specifications, the lowest classification rating will always be obtained.

Rule 14. Carload Rates.—(a) This rule provides that, in order to entitle a shipment delivered at the railroad station to the carload rate, it must be shipped by one consignor, on one bill of lading; the entire shipment must be delivered on the same day, and shipped to one consignee, at one destination. However, it must be borne in mind that, when carload shipments are loaded by shippers on or into cars placed on team tracks or private sidings, in accordance with the demurrage rules, 48 hours are allowed for the completion of the loading.

(b) The minimum carload weight provided is the lowest weight on which the carload rating or rate will apply.

Rule 15. Charges for L. C. L. Shipments.—(a) This rule provides that the charge for a less-than-carload shipment must not exceed the charge for a minimum carload of the same freight at the carload rate; and, if the car is loaded to its full capacity, the charge must not exceed the charge for the actual weight as a less-than-carload shipment.

(b) If a shipment offered as less-than-carload freight is loaded by carriers and is found to be subject to the carload rate, a charge of 2½c per 100 pounds at actual weight will be made for loading, and if the carrier unloads the car, a like charge of 2½c per 100 pounds at actual weight will be made, unless carrier's tariffs provide that the cost of loading and unloading is included in the carload rate.

(c) If a shipper loads a car with insufficient weight for the car to go forward as a carload shipment, and if the carrier forwards the car without loading any other freight therein, the shipper will be compelled to pay charges based on the minimum carload weight for the freight thus shipped.

Rule 17. Articles Not Specifically Provided for.—The Classification does not provide for all articles of commerce, so under this rule articles not specifically provided for, which cannot be covered by the N.O.I.B.N. (meaning "not otherwise indexed by name") description, may be rated at the classification for analogous articles.

Rule 18. Combination Articles.—When combination articles, such as a combination Ironing Board, etc., are not specifically classified, they will be charged at the rating for the highest classed article of the combination.

Rule 19. Knocked Down Articles.—This rule provides that, in order to obtain the ratings for K.D. articles (meaning "knocked down") they must be taken apart in such a manner as to reduce materially the space occupied.

Rule 20. Parts or Pieces Constituting a Complete Article.—This rule provides that an article of several pieces (like an Extension Table, with the table leaves in a separate crate), on one bill of lading, will be charged at the rating provided for the complete article.

Rule 21. Nested. — (a) Under the term "nested," three or more different sizes of an article, for which the nested specification is provided, must be enclosed, each smaller within each next larger article; or three or more of the articles, for which a "nested" specification is provided, must be placed one within the other so that each upper article will not project above the next lower article more than one-third of its height.

(b) If articles of different name or material are nested, whether grouped in one description or shown separately, the nested ratings are not applicable.

Rule 23. Carloads Delivered to More Than One Consignee.—If the owner requests that a

carload shipment be delivered to more than one consignee, a less-than-carload rate will be applied on the entire shipment.

Rule 24. Freight in Excess of Full Carloads.—When a shipment, the authorized minimum weight for which is 30,000 lbs. or more, is forwarded in compliance with Rule 14, each car, except the one carrying the excess, must be loaded as heavily as loading conditions will permit; and each car so loaded will be charged at the actual or estimated weight, subject to the established minimum carload weight and at the carload rating applicable.

(a) If the excess over the quantity loaded in a closed car is loaded in another closed car, it shall be charged at the actual or authorized estimated weight, on the basis of the carload rating applicable on the entire shipment.

(b) If the excess over the quantity loaded on an open car is loaded on another open car, it shall be charged at the actual or authorized estimated weight, on the basis of the carload rating applicable on the entire shipment, subject to a minimum charge of 4,000 lbs. at first class rate.

(c) The freight in excess of full cars must be marked as required for less-than-carload freight, in accordance with Rule 6.

(d) Section 7 of this rule contains a number of exceptions to the application to the rule and it does not apply when specified items in the Classification provide otherwise; nor is it applicable to freight, the authorized recognized minimum

carload weight for which is less than 30,000 lbs.; nor on freight, the minimum carload weights for which are subject to Rule 34.

Illustrations are as follows:

1. A shipment of 40,000 lbs., consisting of a commodity entitled to a minimum carload weight of 30,000 lbs., is loaded in two cars; 30,000 lbs. being loaded in a closed car and 10,000 lbs. being loaded in another closed car. The 10,000 lbs. would be charged at the actual weight and carload rate applicable.

2. A shipment of 49,000 lbs., consisting of a commodity entitled to a carload minimum weight of 40,000 lbs., is loaded on two open cars; 41,000 lbs. being loaded on one open car, and 8,000 on another open car. In this illustration we will assume the commodity is entitled to the fifth class rate and will use the fifth class rate, New York to Chicago. The shipment, as described, would be billed as follows:

41,000 lbs. @ 56½c per 100 lbs.	$231.65
8,000 lbs. as 4,000 lbs., 1st class, @ $1.42 per 100 lbs.	56.80
Total	$288.45

If the excess freight at the carload rate amounted to more than the minimum charge of 4,000 lbs. at first class rate, the excess would be charged for on the basis of actual weight at the carload rate. For example, if shipment weighed 52,000 lbs. and 11,000 lbs. excess was loaded on to the sec-

ond car, the entire lot would be billed at the carload rate, because

11,000 lbs. @ 56½c per 100 lbs. = $62.15

and exceeds the minimum charge of $56.80.

Rule 27. Loading and Unloading Carload Freight.—(a) Under this rule, owners are required to load and unload carload freight, except where this is not practicable, as in the case of some cities where freight is received over platforms and loaded by the carriers.

(b) When less-than-carload shipments, on account of their weight or bulk, cannot be handled by regular station employes, or where the carriers' facilities for handling are not sufficient, such freight must be loaded or unloaded by the owners.

(c) The carriers' rules regulating safe loading and protection of equipment must be observed. Lading must be securely blocked or braced and when in enclosed cars must be away from car doors. The weight of lading must be approximately equal on each side of the car.

(d) When articles are loaded on open cars, small detachable parts must be removed and placed in wooden boxes or secured with the article. Boxes must be encircled at ends with iron straps and securely attached to the article or to the floor of the car. Such boxes must be specified in bill of lading.

Rule 29. Carload Shipments Requiring Two or More Cars.—This rule provides that when a car-

load shipment, on account of length of the articles, requires two or more open cars, the weight to be charged for the series is determined as follows:

The weight for one car shall be the minimum carload weight for the articles constituting the shipment, and for each additional car in the series that weight shall be increased 24,000 lbs.; actual weight to be charged for when it exceeds the weight determined, as specified in the foregoing. No series may consist of more than four cars.

Rule 30. Temporary Blocking, etc.—This rule provides that temporary blocking, racks, supports, dunnage, etc., used to protect and make freight secure for shipment, must be furnished and installed by shipper and at his expense.

No allowance is made for dunnage, etc., except when required for safe transportation of freight loaded on open cars. The maximum allowance is 500 pounds per car, and in no case will less than the established minimum carload weight be charged. Shippers must specify on the shipping order the weight of the material used in order to secure the weight allowance.

No weight allowance is made on dunnage, etc., used by shippers for part carloads in excess of full carloads.

Rule 31. Refrigeration and Heater Service.—This rule provides that carload rates do not include expense for refrigeration unless otherwise provided. Charges for refrigeration and condi-

tions for furnishing heater service, etc., will be found in carriers' Special Service tariffs.

Rule 34. Minimum Carload Weights.—This rule provides that, in ordering a car, the shipper must specify the dimensions of the car desired. If this is not done and freight is loaded in a car of greater dimensions than required for the transportation of the particular commodity, the minimum weight for the car used will be charged.

In the list of commodities, the minimum carload weights for many articles are shown as "Subject to Rule 34." This means that the articles are entitled to the minimum weight stated, provided they are loaded in a car not over 36 feet 6 inches in length, or provided the shipper has ordered a car not to exceed these dimensions.

The following is an illustration:

Hand Cultivators, loose or in packages, are entitled to a carload minimum weight of 24,000 lbs., subject to Rule 34. This means that if the shipper ordered a car not over 36 feet 6 inches in length, this minimum weight of 24,000 lbs. would apply on the shipment, even though the carrier furnished a car of greater dimensions. If the shipper did not specify that he desired a car of dimensions not exceeding 36 feet 6 inches, and the carrier furnished a car of greater dimensions, the shipper would be compelled to pay charges based on the minimum weight of the car furnished.

Rule 36. Disposition of Fractions in Computing Rates.—In computing rates based on a multiple or proportion of another rate, unless otherwise provided in a tariff, fractions of less than ¼ are dropped and fractions of ¾ or greater are increased to the next whole figure, thereby permitting only the use of the fraction ½.

For example: The first class rate, New York to Cincinnati, Ohio, is $1.23½, and 1½ times this rate is $1.85¼; but in accordance with this rule the rate assessed would be $1.85½.

Rule 37. Switching, Storage, Etc.—The Classification provides, under this rule, that the rates shown in tariffs at points of origin and destination, as to demurrage, switching, storage and other terminal expenses, are applicable to traffic moving under the classification.

Rule 38. Application of Commodity Rates.—This rule provides that when a commodity rate is established it removes the application of the class rates to and from the same points on that commodity, except when the tariff provides for the alternative use of class and commodity rates when one makes a lower charge.

This rule cannot be interpreted as meaning that a carload commodity rate must take precedence over a less-than-carload class rate, nor that a commodity rate on two articles in straight carloads must take precedence over the class rate applicable to the two articles in mixed carloads. This rule appears to be somewhat ambiguous

where the minimum weight under the class is less than the minimum weight under the commodity rate; in other words, if a commodity rate is established on an article in quantity of not less than 50,000 pounds, and the commodity rate is substantially lower than the class rate, there is a question as to whether this obviates the application of the class rate on a minimum of, say, 30,000 lbs.

Rule 39. Explosives and Dangerous Articles. This rule prohibits the shipment of explosives and dangerous articles, except under the rules and regulations prescribed by the Interstate Commerce Commission.

Rules 40 and 41. Specifications for Containers. These rules contain specifications as to the construction of containers, which must be complied with in order to obtain the lowest ratings applicable to commodities. A careful study of these rules should be made, because the shipper should be thoroughly familiar with the requirements and specifications contained therein in order that he may obtain the lowest classification rating on his shipment. A full understanding of not only these rules, but of all the rules of the classification is one of the most valuable qualifications of a traffic manager.

Chapter 8

FREIGHT CARS: WEIGHTS AND WEIGHING

COLLATERAL READING: In the Freight Traffic Red Book—Traffic Abbreviations; Traffic Glossary; Rules Governing Weights and Weighing.

Section I

Suiting the Car to the Commodity

Varieties of Cars.—There are tens of thousands of different commodities transported by freight from place to place in our country. The great bulk of this freight is carried in the regular cars which each railroad has standardized for itself; such as, box cars, flat cars, stock cars, and coal cars, and other styles of special cars.

In the early sixties, there developed a need for special cars to carry certain kinds of freight. The railroads could not, and sometimes would not, build these cars; so they were built by individuals or companies for their private use. The beef packers, the coal operators, and the oil companies soon established their own lines of special cars—private cars, as they are called. These cars are now known as refrigerator, tank, stock, coal, and poultry cars. The varieties of cars will undoubtedly be increased as new kinds of freight are developed.

The Increase in Car Sizes.—All freight is transported in bulk, in packages, or in special containers. The weight of shipments in a single car has been increased in accordance with the carrying capacity of the car. This increase has been very noticeable in the past 45 years. In 1875 the normal car capacity was 20,000 pounds, but now few cars of less than 60,000 pounds capacity are used, and many have a capacity of 80,000 pounds. Steel cars for special coal and ore traffic, with a capacity of 100,000 to 120,000 pounds, are also generally used. The size of packages carried on or in flat cars has also been increased, but the dimensions cannot exceed certain limits set by tunnels, bridges, and other physical restrictions.

Railway Equipment Register.—The Official Railway Equipment Register is a publication issued by the United States, Canadian and Mexican Railroads, through an authorized agent. It is published monthly and shows by car numbers, the marked capacity, length, dimensions and cubical capacity of freight cars used to transport freight. This tariff shows the various kinds of cars of the different railroads and gives also the inside measurement, width of doors, both side and end, for all box cars.

How to Order Suitable Cars.—When ordering cars shippers should consult the Railway Equipment Register and selection should be governed by the nature of the commodity. Certain commodi-

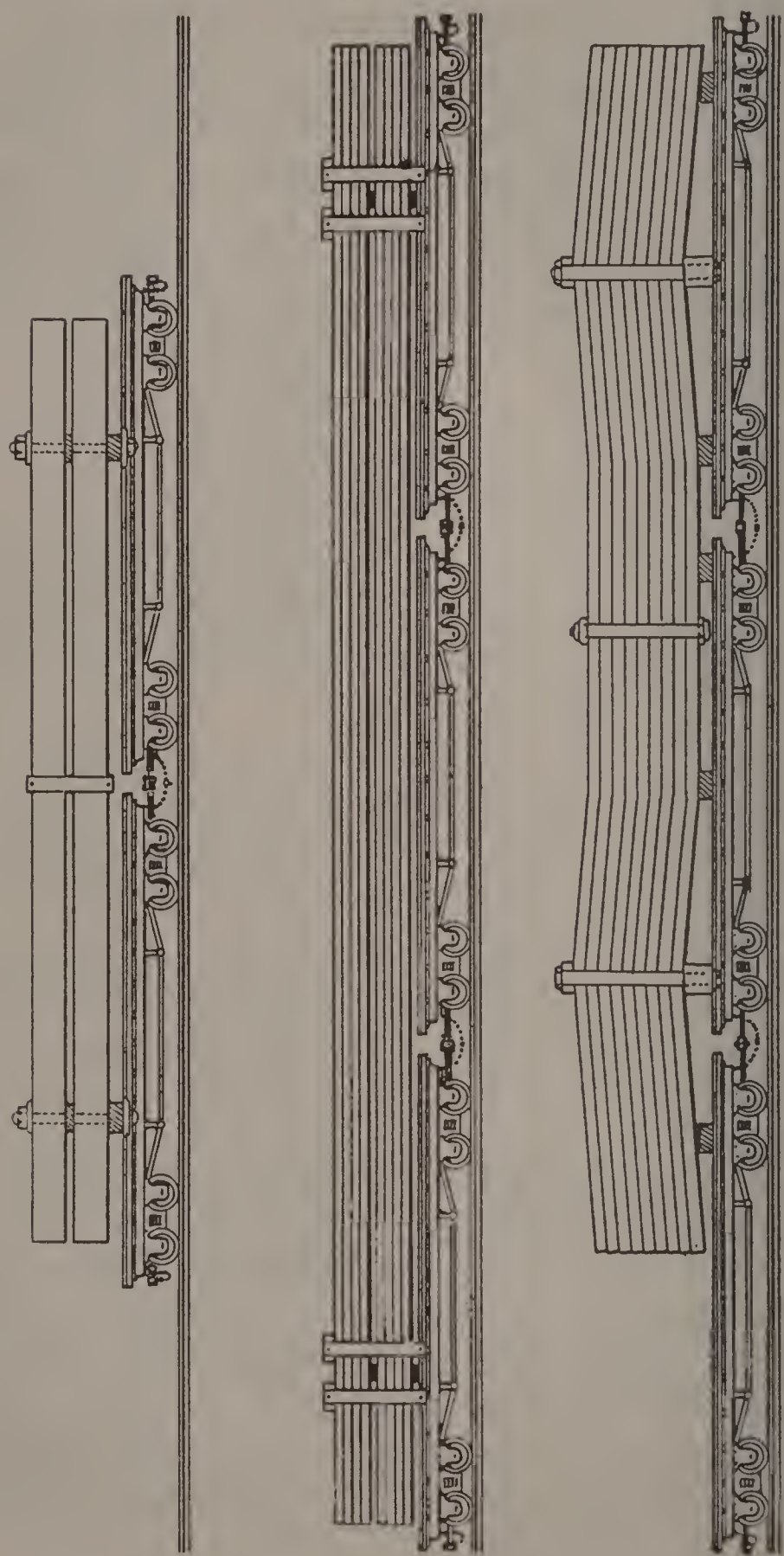
ties require protection from heat or cold and are forwarded in special cars built for that purpose. Other commodities, for the purpose of protection, are loaded in box cars rendered rain and snow proof, and under lock or seal. Some commodities are light and bulky and require large cars; some are loaded in bulk; some are loaded in open cars, because they are not affected by weather conditions, or the danger of pilfering, or because they are too heavy or are of too great dimensions to be loaded in box cars.

Some articles are of such length as to require two or more open cars to transport them. Cars used in this way are illustrated on page 100, and are defined as follows:

1. When two cars are used to transport a commodity which is too long to be loaded on one car, the weight being equally divided between them, they are termed "twin" cars.

2. When a commodity is too long to be loaded on one car and requires two or more cars, those used are termed a "series." No series can exceed four cars.

3. Empty cars are frequently used for protection of a commodity too long to be loaded on one or two cars, and are coupled either before or after the loaded car, or between two loaded cars. The empty cars so used are termed "idlers."



"TWIN" CARS, "SERIES" CARS, AND AN "IDLER" CAR IN SERIES.
SEE PAGE 99, FOR DESCRIPTION

Section II

Weights and Weighing

Definitions of Weights.—There are a number of different weight terms used in traffic, the most important being as follows:

GROSS WEIGHT: The weight of a car and its contents, or the weight of a container and its contents.

TARE WEIGHT: The weight of an empty car or of an empty container.

NET WEIGHT: The weight of the contents of car or container.

ESTIMATED WEIGHT: The weight prescribed in tariffs for commodities shipped in specified containers or in a specified manner.

AGREED WEIGHT: The weight prescribed by agreement between Carrier and Shipper, for the acceptance of commodities shipped in specified containers or in a specified manner.

MINIMUM WEIGHT: The least weight on which carriers will apply a rate or will compute the charges.

LIGHT WEIGHT: The weight of an empty car.

WEIGHT CAPACITY: The weight carrying capacity of a car.

The Light Weight and Weight Capacity of a car are usually stencilled thereon.

Freight Charges Based on Weight.—Weight is usually the basis for computing freight charges

and is used in accordance with the provisions of the tariff.

Accuracy of weight is as important as accuracy of rates. Consequently, it is essential for a shipper to be familiar with the rules and practices of weighing freight.

Weighing of Cars.—Carload freight should be weighed at the point of shipment, but if scales are not available there the weighing should be performed on the nearest scales. The scales on which cars are weighed should be tested, and the weighing should be done in accordance with the rules of the carriers.

When track scales are used, weighing must be done under the supervision of the carriers represented, or under authorized weight agreements.

Cars may be weighed at rest or in motion, but they should be uncoupled at both ends. When twin cars are used, they may be weighed coupled, either at rest or in motion, on scales designed for this purpose.

Less-than-carload freight should be weighed before shipment, if possible, and the weight noted on bill of lading. If shippers have no scales, they should endeavor, as far as practicable, to have carriers note the weight on bill of lading.

If tariffs provide for the acceptance of an *estimated* weight for a particular commodity, shipped in specified containers or in a specified manner, either carload or less-than-carload,

weighing is unnecessary, but the estimated weight should be shown on bill of lading.

Re-Weighing.—Carload freight is re-weighed when the carrier believes that it is necessary to test the accuracy of previous weights. It is also re-weighed by request of consignee or consignor when doubt exists as to the accuracy of the billed weight, subject to charges provided in tariffs; but no charge will be assessed by the carrier if the ascertained weight shows a discrepancy greater than the Tolerance.

Less-than-carload freight will be re-weighed at delivering stations when consignees dispute the accuracy of the billed weight, usually without charge even though the billed weight is found to be correct.

Tolerance.—The difference in weights, due to variation in scales or weighing, which may be permitted without correction of the billed weights, is called "tolerance."

The tolerance is one per cent of the lading, with a minimum of 500 pounds, on all carload freight, including coal and coke, except that when ashes, cinders, clay, gravel, ore, slag, uncut stone, etc., and similar bulk freight, brick and soft drain tile are loaded in open cars, the tolerance shall be one per cent of the lading with a minimum of 1,000 pounds.

Tolerance on coal and coke does not include difference in weight due to evaporation. The tol-

erance allowed for this cause is determined and published in initial carrier's tariff.

Weights of commodities subject to shrinkage in weight from their inherent nature, properly obtained at point of origin, are not changed, except as provided for in the tariffs of the carriers.

As a rule, all solid carloads of ordinary merchandise, except those containing commodities transported at an authorized estimated weight, are weighed on track scales by carriers while en route, and the ascertained weight is noted either on the card waybill or on the regular waybill accompanying the cars. On arrival at destination, the weights thus noted are checked against the billed weights by the delivering agent, and if differences exceeding the tolerance are discovered, either increasing or reducing billed weights, corrections are issued and charges collected on the corrected weights.

Illustrations of Tolerance.—

1. Billed weight of a car is.....36,900 lbs.
   Ascertained track scale weight...37,200 "

   Difference ..... 300 lbs.

No correction would be issued as the difference must be 500 pounds or more.

2. Billed weight of a car is.....60,000 lbs.
   Ascertained track scale weight.....59,450 "

   Difference ..... 550 lbs.

No correction would be issued as the difference is not 1 per cent of the lading.

3. Billed weight of a car is.....36,900 lbs.
   Ascertained track scale weight.....37,450 "

   Difference ..... 550 lbs.

Correction would be issued as the difference exceeds the minimum of 500 pounds tolerance.

Agreed Weight. — When shipments are forwarded in packages of uniform size and weight, arrangements may be made with carriers to ascertain the weight of such packages and subsequently the weight thus determined will be accepted and applied by the carriers under weight agreement, properly supervised. Such weights, however, must be designated in the prescribed manner on bills of lading or weight certificates, and the property will not be re-weighed. Under an arrangement of this nature freight is received by carriers and billed at what is termed the "Agreed Weight." A copy of each Weight Agreement must be filed with the Interstate Commerce Commission.

The carriers, however, will frequently check the records of shippers for the purpose of verifying the weights and descriptions furnished, and if freight is forwarded in carloads, a sufficient number of cars will be weighed for verification.

An agreement of this nature is a great aid to shippers who forward their freight in containers of uniform size, as it facilitates the movement of the freight and renders it unnecessary for the carriers to weigh such shipments.

Under this agreement the shipper shall report and certify correct gross weights and give correct description of commodities in bills of lading. He shall also allow the authorized representative of the carrier to inspect the original weight sheets and records necessary to verify the weights and descriptions of the commodities certified in the bills of lading.

If weights of uniform or standard weight articles are based upon averages, the shipper shall give prompt notice to the carrier when any change is made in the package which will affect the average weight.

Either party to a weight agreement may cancel it by ten days' notice in writing.

Estimated Weight.—The estimated weight is the weight specifically prescribed in tariffs for goods shipped in certain packages or in a certain manner.

Minimum Weight.—Carload rates are subject to a minimum weight that must be loaded, or charge is made therefor. The minimum weight for different commodities varies and, in some cases, is fixed by the capacity of the car used. When a car is ordered, the weight to be shipped should be specified, and in the case of bulky goods the dimensions of car needed should also be stated.

Chapter 9

MOVEMENT OF FREIGHT—OUTBOUND

COLLATERAL READING: In the Freight Traffic Red Book—Traffic Glossary; Standard Forms of Shipping Papers.

Section I

Problems Confronting a Shipper

Classes of Shippers.—There are three classes of shippers:

1. Shippers of carload freight; the traffic term for which is C. L. freight.

2. Shippers of less than carload freight; called L. C. L. freight.

3. Shippers of both C. L. and L. C. L. freight.

The method of receiving and delivering freight varies in different sections of the country, each section having different problems to solve. However, in no section are the traffic problems so intricate and complex as they are in Chicago and New York City. Anyone capable of directing the traffic through the terminals in these cities will be competent to handle traffic in any other section. Therefore, many of the illustrations and problems which we shall use in this course are taken from the movement of freight to and from Chicago or New York territory.

Problems of C. L. Shippers.—Some of the problems confronting a C. L. shipper are:

1. What agency shall he use in getting his shipment to destination?

The answer to that question is determined by three factors; namely,

(a) Nature of the commodity.

(b) Whether quick transportation is desired or not.

(c) Routing instructions.

2. What kind of car shall he order?

The obvious answer is that the car should be suitable in every way for the proper transportation of the commodity.

3. Shall delivery be made to a station, team track, private siding, or lighter?

In considering this question, the following differences in responsibilities are to be noted:

(a) If shipment is delivered to a *station* and is unloaded from trucks onto a platform, it is loaded in the car by *carrier*.

(b) If shipment is delivered to a car on a *team track, private siding, or assigned siding,* it is loaded in the car by *shipper*.

(c) If shipment is delivered to a *lighter* at a lighterage point, it is unloaded from lighter and loaded into or on car by *carrier*. Sometimes, however, a lighter is loaded by the shipper and an allowance per 100 lbs. is made to him, but the allowance made must be in accordance with a legally published tariff.

4. What route shall shipper choose?

Shipment should be forwarded (a) by the route specified by consignee; (b) by the cheapest route, if route is not specified in customer's order; (c) by the quickest route, if the commodity is of a perishable nature or if it is urgently needed.

If shipment is destined to a "non-competitive point," there is no choice in selection of route.

Carload ratings apply only when a carload of freight is shipped from one station, in one day, by one shipper, for delivery to one consignee at one destination and on one bill of lading.

When freight is loaded in a car placed on team track, assigned or private siding, or is delivered to a lighter, 48 hours are allowed to accomplish loading. At the expiration of this period demurrage accrues.

Shippers should endeavor to impress upon their customers, when ordering, to specify delivering line and the station at which delivery is desired. Failure to do this may result in the shipment being consigned to a station located some distance away from the consignee's establishment, and excessive cartage charges may be incurred. Shipment should be consigned to the delivery station nearest to the consignee's store or warehouse.

Problems of L. C. L. Shippers.—The problems confronting an L. C. L. shipper are many and in most cases very intricate, some of which are as follows:

Selection of route.

Best method of forwarding small and large shipments.

Advisability of shipping through a responsible forwarding company in a "Pool" car.

Forwarding in Package cars.

The following considerations must be taken into account in each of these problems:

1. Routing: If route is not specified by consignee, the shipper should forward via the agency publishing the lowest rate.

2. Method of Forwarding: When forwarding a shipment by freight, it is advisable to ship in as large quantities as possible, for the purpose of reduction of cartage charges, etc. Small shipments may frequently be forwarded at less expense via express or parcel post.

3. Forwarding Companies: Frequently L. C. L. shippers avail themselves of the services of forwarding companies, which consolidate carloads of analogous commodities taking the same C. L. class rates and forward them to distant points, consigned to their representatives or themselves, where they are distributed to the respective consignees. By this method the rule governing carload shipments is complied with and the small shipper obtains a rate lower than the regular L.C.L. rate. This method of shipment is often used by large shippers, having branch departments in various parts of the country, who forward carloads of various consignments to a

distant destination for distribution and for forwarding from that point to their final destinations, thereby effecting a large reduction in the transportation charge.

4. Package Cars: The "Package Car" service in vogue with many railroads is a desirable method of forwarding small shipments to distant points. It is a service accorded by railroad companies whereby on a certain day, or days, of a week they load at designated stations cars with less than carload shipments destined to certain distant points; for example, from New York to St. Louis, or from Chicago, Ill., to Denver, Colo.

The "Package Car" service is appreciated by many shippers, because freight goes through to destination without transfer; time of movement is thus greatly reduced; and liability for loss and damage is reduced to a minimum. Frequently the carriers furnish a Refrigerator "Package Car" service which many shippers use advantageously. Industrial traffic men should become familiar with this service.

Some time ago a traffic specialist, who has been in business for many years handling import freight at the port of New York for western buyers, was requested by a large Denver concern to take charge of a few small shipments. Being familiar with the "Package Car" service, on inquiry he found that a certain trunk line was forwarding weekly a "Package Car" to Denver, and he thus forwarded these shipments. The Denver concern had never before heard of this service and was

greatly surprised to receive these shipments in a through car. This company communicated immediately with this traffic man and manifested its appreciation of his ability by giving him the contract to handle all of its business which was a considerable item. This is only one example of how valuable it is to have an intimate knowledge of the various kinds of service accorded by railroads.

Section II

Details Affecting a Shipment

A Trip by Freight.—We shall now follow the course of an L.C.L. shipment from the time the order for it is received, and accompany it to the railroad freight station for the purpose of correct delivery to carrier. We will then meet the shipment at destination and follow each step necessary for the accomplishment of a correct delivery.

The things which require the close attention of the shipper, in getting his goods into the hands of the purchaser safely and with least trouble, are the following:

Containers,
Packing,
Marking,
Shipping Papers,
Preparation of Shipping Papers,
Charges Prepaid or Collect,
Straight or Order Consignment,

Selection of Route,
Delivery to Carrier,
Disposition of Bill of Lading,
Disposition of Memorandum Bill of Lading.

Let us look closely into these details of shipping, for they are vital to every shipper.

Containers.—The lightest possible containers consistent with the rules of Classification should be selected in order to keep down the freight and cartage charges; but containers must be of sufficient strength and security to afford reasonable and proper protection to the freight enclosed therein. The cause for a large majority of damage claims is the insufficient strength of the containers. Therefore, while reduction of weight of containers is desirable in order to reduce freight charges, yet it is far more essential that all articles should be in such condition and so prepared for shipment as to render the transportation thereof reasonably safe and practicable.

In order to secure the lowest Classification rating shipment must strictly comply with the specifications contained in the Classification relative to containers, the method of packing, and description of articles. When a shipment does not comply with the regulations of the Classification it is either rejected, or a higher rate is assessed. Therefore, traffic men should thoroughly understand the Classification rules and know how to interpret correctly the various ratings.

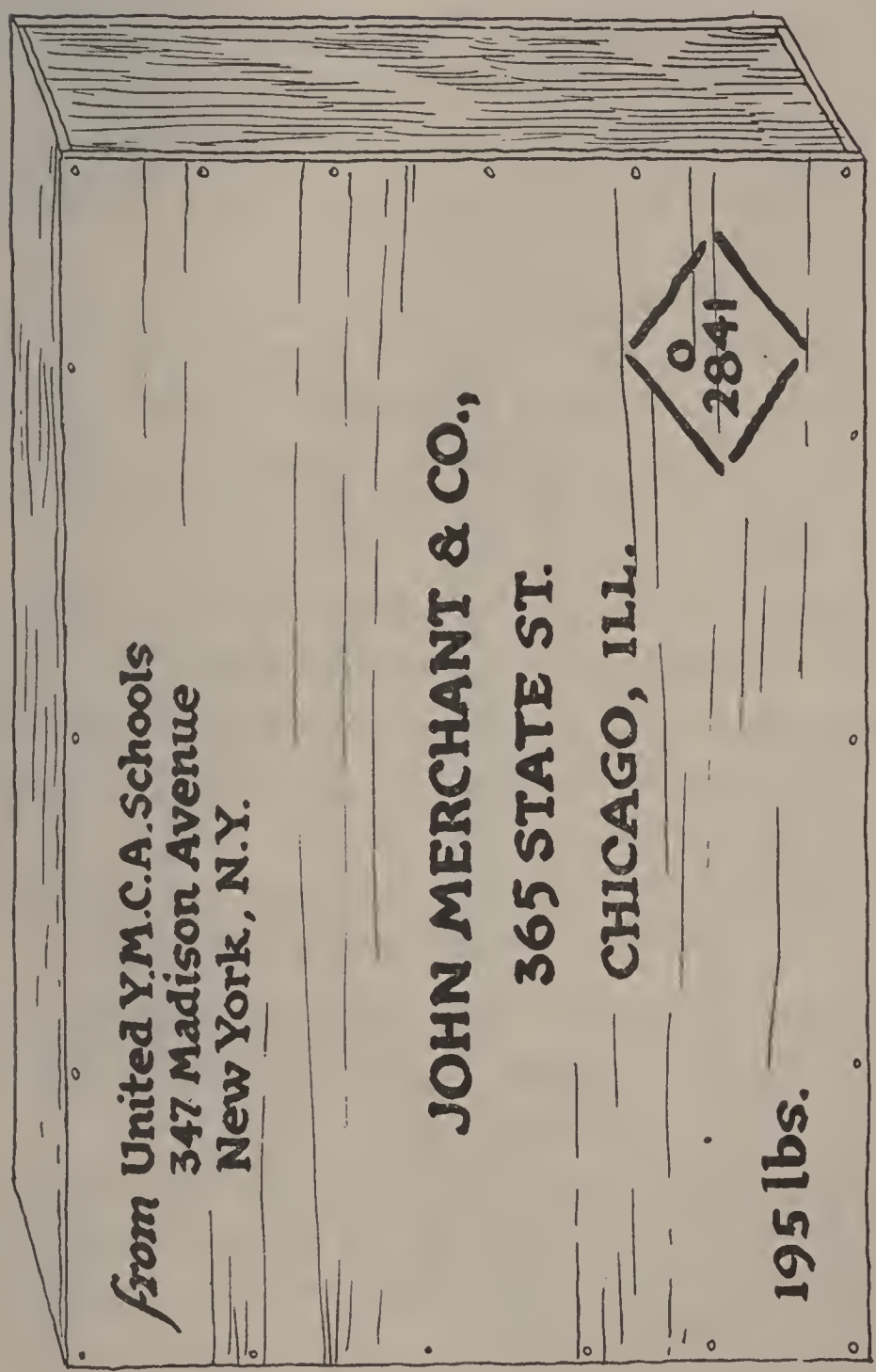
Packing.—Package and packing specifications are based upon extensive tests as well as upon experience.

Commodities taking different rates should not be placed in the same package. If they are, the rate of the higher class will apply to the entire contents, and a wrong description of contents subjects shipper to a heavy penalty.

Freight inspectors are duly authorized representatives of Bureaus established by the various transportation companies, and their duties consist in verifying shippers' weights and in seeing that shipments are properly described in bills of lading and are classified accordingly. They have authority to weigh all shipments offered for transportation, and to open packages in order to ascertain whether property is being correctly described by consignor.

Marking.—The name of consignee, address, street and number, city or town, county (if there are two or more places of the same name in the state), and state must be plainly marked or stenciled on each package of L.C.L. freight. It is also wise to mark or stencil thereon the name and address of shipper, preceded by the word "From." This is of great assistance to both shipper and carrier, when shipment goes astray or is unclaimed. Frequently, the name of shipper is marked on the opposite side from that on which the consignee's name appears.

When a label or a tag is used, it should be



CORRECT MARKING FOR A "STRAIGHT" CONSIGNMENT

securely fastened and, in case of pieces or bundles of metals, tags should be fastened with wire.

In case second-hand containers are used, all previous shipping marks must be removed.

A carload shipment need not be marked.

An example of correct marking for a "straight" consignment is to be found on page 115.

If an L.C.L. shipment is consigned "to order," the words "To Order" or "Order-Notify" must invariably be shown on each package, and further marked with an identifying symbol or number which also must be shown on shipping order and bill of lading.

Example of correct marking for an "Order-Notify" consignment is given on page 117.

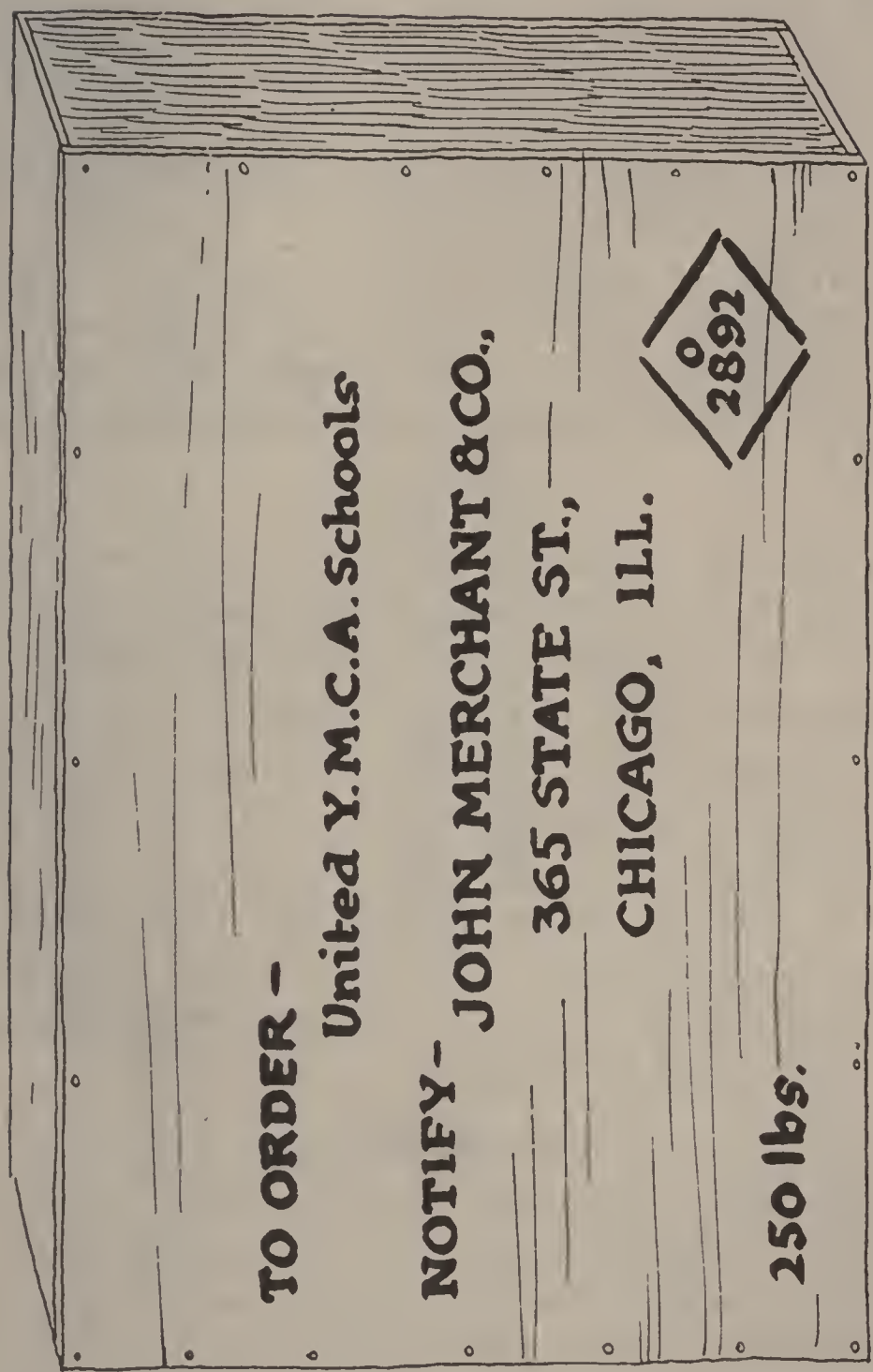
When an L.C.L. shipment is consigned for "Export" the name and address of the broker or agent at the port of export may also be shown.

An example of correct marking for an "Export" consignment is shown on page 119.

Shipping Papers.—The Shipping Papers consist of a Bill of Lading, a Memorandum Bill of Lading, and a Shipping Order.

Many shippers have their own printed forms. These forms must comply with the rules governing the uniform bill of lading, and the conditions must be printed thereon.

Preparing Shipping Papers.—Shipping papers should show date and point of shipment, name of shipper, name of carrier, name of consignee, mail



CORRECT MARKING FOR AN "ORDER-NOTIFY" CONSIGNMENT

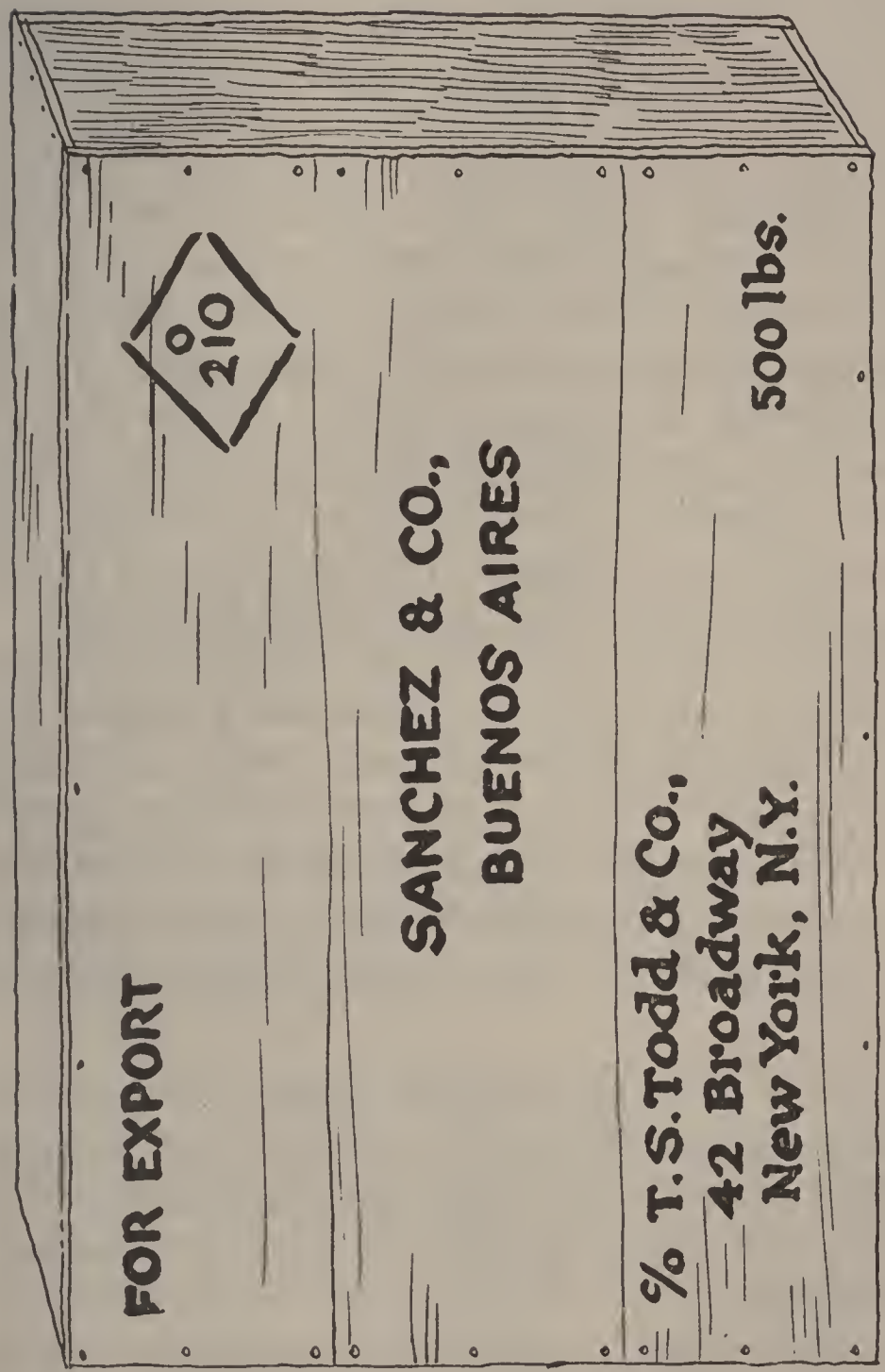
address (not for purpose of delivery), destination, state, and county (if there are two or more places of the same name in the state), the descriptions of articles should conform to the Classification descriptions; indefinite terms must not be used, and the shipping papers for L.C.L. shipments must specify the number of packages.

If freight is weighed, or is contained in uniform packages which are accepted by carriers at an authorized estimated weight, said weight should be marked on case and noted on shipping papers.

Charges Prepaid or Collect. — If freight charges are to be prepaid, in the place provided therefor in shipping papers should be written or stamped the words "To be Prepaid." If shipment is forwarded with freight charges "To Collect" and the consignor desires to be relieved of all liability for said freight charges, he should sign the bill of lading in the place designated thereon for signature. Every carrier has the right to require at time of shipment, prepayment or guarantee of all charges.

Straight or Order Consignments.—If shipment is a Straight consignment, use the form for that method. If the shipment is an Order-Notify consignment, use the blue and the yellow forms, and note thereon an identifying symbol or number corresponding with that marked on the package.

A shipment consigned "Order-Notify" must be marked with a distinguishing symbol or number;



CORRECT MARKING FOR AN "EXPORT" CONSIGNMENT

and where shipment consists of more than one package, the use of a serial number is recommended. The symbol, number, or numbers must also be shown in shipping papers and be identical with those marked on package.

Selection of Route.—If consignees have specified the routing desired, said routing should be noted on the shipping papers; in the absence of such instructions, the traffic department should note thereon the proper route. However, it is not necessary to show routing instructions where neither shipper nor receiver has preference; for, if routing is not shown, it is the duty of carrier to forward via the cheapest reasonable route.

Delivery to Carrier.—Merchants either own their trucks or have contracts with responsible drayage companies to perform their cartage service. When freight is ready for shipment the drayage company is notified, the shipment is loaded on truck and hauled to the nearest freight station of the carrier.

It is a practice in large cities for truckmen to go to terminals in the A.M. for the incoming freight, and ship the outgoing freight in the P.M. This is one of the greatest causes of congestion at terminals.

If the traffic manager is responsible for the proper operation of the drayage department, a large amount of money can be saved by skillful and intelligent direction.

Disposition of Bill of Lading.—The bill of lading and the shipping order are handed to the truckman when loading the shipment, which is hauled by him to the designated carrier's station. It is delivered to the carrier's receiving clerk, who inspects the package or packages and, if in proper shipping order, signs the bill of lading. This document is returned by the truckman to shipper. If the bill of lading covers a "straight" consignment it should be forwarded to consignee so that he may readily identify himself as the owner of the consignment and therefore insure prompt delivery.

If the bill of lading covers an "order" consignment it should be turned over to the shipper's accounting department and after being properly endorsed, draft and invoice should be attached thereto. These documents are then delivered to the bank in which the shipper has an account for forwarding to its correspondent bank at destination to be delivered to the purchaser against his acceptance of the draft.

An Order consignment will not be delivered except on surrender of the bill of lading properly endorsed; which means that it should be endorsed on the back with the signature of the party to whose order it is consigned. Some carriers require the party taking delivery also to endorse.

The object of an Order bill of lading is usually to enable the shipper to collect for a shipment before it is delivered at its destination. This is

accomplished by sending the original bill of lading through the bank, with a draft drawn on the purchaser for the value of the shipment. Upon payment of draft, the one to whom delivery is to be made receives the bill of lading, surrenders it to delivering agent, and obtains delivery of the consignment.

Disposition of Memorandum Bill of Lading.—The Memorandum bill of lading should be filed by shipper as a record of the shipment. If desired, the carrier will sign this document, noting thereon the word "Duplicate."

The shipment is now in the possession of the carrier. We will assume that the destination is some large city, and in the next lesson we will meet it on arrival and learn how the delivery is accomplished.

Chapter 10

MOVEMENT OF FREIGHT—INBOUND

COLLATERAL READING: In the Freight Traffic Red Book—Traffic Glossary; Standard Forms.

Section I

Preliminaries to Getting Deliveries of Freight

Notice of Arrival.—The shipment discussed in the last chapter has now arrived at destination and in this chapter we will describe each step necessary to accomplish a correct delivery.

On arrival of waybill and shipment at destination, a notice in writing is sent or given to consignee by carrier's agent, or as otherwise agreed to in writing by carrier and consignee, within 24 hours (one day) after arrival. This notice must specify the point of shipment, commodity, and amount of charges, if any.

An impression copy of written notice is retained by the carrier. When the address of the consignee does not appear on waybill and is not known, notice of arrival is deposited in the United States mail enclosed in a stamped envelope bearing return address and if it is returned it is preserved on file.

Delivery Requirements.—In order to obtain delivery of the goods, consignee will have to pursue the following course:

1. For a "straight" consignment he must surrender arrival notice and original bill of lading to carrier, or by other means identify himself as the owner of the shipment.

When a shipment is consigned to "order" arrival notice is sent to the "notify" party named in the "order" bill of lading who, on receipt of said notice, calls at a designated bank, pays the amount of the draft, and obtains the original bill of lading. The "order" bill of lading, properly endorsed, must be surrendered in order to obtain delivery of the freight named thereon. Frequently an "order" bill of lading bears a notation to the effect that inspection or sampling is to be permitted prior to payment of draft. In such cases the bank will usually entrust the bill of lading to the purchaser for the purpose of exhibiting it to the delivering agent so that this privilege may be allowed. If a notation of this kind was not made on the bill of lading, the railroad agent would not permit inspection or sampling until the original bill of lading properly endorsed had been surrendered and freight charges paid.

2. He must pay freight charges to cashier of carrier and obtain receipted freight bill.

3. He must, at the same time, obtain an order for delivery of the goods.

4. He then presents to the delivering clerk the order for delivery and after receiving the property signs a receipt.

Precautions in Signing Freight Receipts.—There are several very good reasons why great care should be exercised in signing for freight. Among these reasons are the following:

(a) Unless exception is taken as to condition of freight and said exception noted on receipt, the shipment is receipted for in "Good Order." However, a "Good Order" receipt for freight does not entirely release carrier from liability, yet it is difficult to collect a claim when a "Good Order" receipt has been given. The carriers will not permit consignees to make the notation "Recoopered" or "Bad Order" on receipts when signing for freight that is not in apparent good order but will insist that each exception be specifically stated. On the other hand, however, the carriers when receiving goods for shipment, often insert these notations on receipts, but shippers should invariably decline receipts so noted.

(b) The consignee should be very careful to see that every package or piece of freight on the bill of lading is delivered by carrier. It frequently occurs, through carelessness, that clean receipts are given for freight that is not received or is in a damaged condition. Consignee should insist that carrier's delivery clerk make specific notation on delivery receipt, as to shortage of goods or condition thereof, before affixing his signature to the receipt. In addition, he should endeavor to have the delivery clerk also make the same notation on the freight bill.

(c) Before beginning to take delivery of cars covered by bills of lading bearing the notation "Shippers' Load and Count," car seals should be examined to ascertain if they are intact. If they have been tampered with, the contents of the cars should be carefully tallied and examined.

Section II

Procedure in C. L. and L. C. L. Delivery

Carload Delivery.—There are three kinds of deliveries made of C. L. shipments; viz., Station delivery, Track delivery and Lighterage delivery. The procedure in each case is as follows:

Station Delivery.—If a station delivery is made, freight is unloaded at carrier's terminal by its warehousemen or labor force and is placed together in one section. These sections are usually designated by numbers or letters. The notice for this delivery usually states that 48 hours (not including day of arrival, Sundays, and legal holidays) will be allowed for the removal of freight. If freight, except automobiles or other self propelled vehicles (not excepting motorcycles or bicycle motor wheels) is not removed within the free time allowed, it is subject to the following storage charges per day:

For each of the first 5 days, 1½c per 100 lbs., minimum charge 25c.

For the sixth day and each succeeding day, 3c per 100 lbs., minimum charge 50c.

At the expiration of free storage time, the carrier is authorized to place shipment in a public warehouse at the expense and risk of owner. This is the action usually taken, unless the freight is of such a nature that the warehouse is unable to handle it. The accrued storage, however, is always added to the extra expense that is incurred. When freight is placed in a public warehouse, the consignee is promptly notified by carrier of the action taken.

Track Delivery.—If track delivery is to be given, the car is placed on a team track and consignee is promptly notified; or, if consignee has a private siding, the car is placed thereon under his instructions. At some stations where the facilities for team track delivery are limited, track storage in addition to demurrage, is charged after the expiration of free time and the following is a form of stamp placed on arrival notice of some carriers whose facilities are thus limited:

IF NOT REMOVED BY.....DEMURRAGE AND
(HOUR AND DATE)
TRACK STORAGE CHARGES WILL ACCRUE AS FOLLOWS:

DAYS...	1-DAY	2-DAY	3-DAY	4-DAY	5-DAY
DEMURRAGE.....	$2.00	$2.00	$2.00	$2.00	$5.00
TRACK STORAGE....	1.00	1.00	2.00	2.00	2.00
TOTAL...	$3.00	$3.00	$4.00	$4.00	$7.00

In Computing Time, Sundays and Legal Holidays Are Excluded

Track storage is a rental charge for the track space occupied by a car during the demurrage pe-

riod, but is applicable only to cars placed on public team tracks and the rates charged must be shown in a legally published tariff.

Forty-eight hours (two days) free time are allowed for unloading cars placed on public team tracks. On cars held for unloading, time will be computed from the first 7 A. M. after placement on public delivery tracks and after the day on which notice of arrival is sent to consignee.

Private Sidings. — Many industrial concerns have side tracks running into their plants and all carload shipments consigned to such plants are placed on these side tracks by the carriers. The free time for cars so placed is computed from the first 7 A. M. after actual placement.

Lighterage Delivery.—Freight arriving at terminals consigned for lighterage delivery is unloaded from cars and loaded on lighters for transportation to destination. On arrival at terminals of cars so consigned, notices of arrival are sent to consignees.

When the lighter reports at its destination the captain of the boat presents a lighter manifest to the consignee who must provide a berth, and 48 hours from the time lighter reports, Sundays and full legal holidays not included, are deemed lay days without charge, after which demurrage shall accrue against each consignee at the tariff rates per day of 24 hours or fraction thereof, Sundays and holidays included.

The demurrage tariff charge on ordinary lighters in New York Harbor is $20 per day. When

special lighters are used the demurrage charge varies according to the capacity of the lighter, and it is considerably higher than on ordinary lighters.

If no berth is provided by consignee on arrival of lighter at its destination, or if the lighter is not unloaded within the lay days, the property may be removed to and stored in a public warehouse at the cost of owner and without liability on the part of transportation company. Freight thus stored is subject to a lien for all lawful charges.

Less-Than-Carload Delivery. — Delivery of L. C. L. freight is usually a station delivery and is made from platform or pier. The process is as follows:

1. A notice of arrival is sent out in the same manner as for carloads.

2. On receipt of arrival notice the consignee should turn it over to his drayman together with bill of lading. He should present these documents to the cashier located at the terminal of the transportation line. If the shipment is "Collect" and consignee is not on the credit list, the drayman should pay the freight charges.

3. The receipted freight bill and an order for delivery are then given to drayman, who presents it to the carrier's delivery clerk and obtains the freight.

The instructions relative to signing receipts for C. L. freight apply also to L. C. L. shipments.

When accepting delivery of package freight, if a package bears evidence of having been tampered

with, it should be opened and only actual contents signed for. If a package appears to be light in weight, because of either leakage or sifting, it should be weighed, and only the actual weight signed for.

Section III

Liquidating Freight Bills

Carriers' Credit List.—Formerly the carriers allowed credit to shippers and receivers, and had in effect what they termed the "Authorized Accommodation List." The names of the shippers and receivers appearing on this list were accorded daily, weekly, or monthly credit as respectively authorized.

That practice, however, has been abolished and now credit is extended for a period not to exceed 96 hours. To obtain this credit, application must be made to carriers in compliance with their individual rules.

Many of the carriers by railroad require that an application for credit must be sent to the carrier's treasurer; and that there must be given, as references, two commercial houses and one bank.

For large shippers and receivers this accommodation is a great convenience and quite an economical factor, as it aids prompt shipment and avoids considerable delay in obtaining delivery. It is also a convenience to the carrier.

Auditing Freight Bills.—Every shipper and receiver should have their freight bills audited for

the purpose of verification of WEIGHT, RATE, and TOTAL CHARGES.

Merchants, as a rule, pay very little attention to the charges shown on freight bills. Some do check the bills as to correctness of calculation, but very few check for the purpose of ascertaining if the goods are properly *classified* and if the *rate* is correct.

In an interview with the senior member of a well known firm, engaged in an almost entirely interstate business amounting to several million dollars per year, he was asked if he knew whether the freight bills paid by him were correct or not. He replied that he did not *know,* but assumed that they were.

The freight charges paid by this firm amount to many thousands of dollars each year. It is only reasonable to assume that many errors have occurred in its freight bills, and that a large sum of money could have been saved if they had been audited.

When the railroads were turned back to the owners by the Federal Government, after the Great War, many clerks were discharged. Some of these—rate clerks—knowing the value of auditing bills, presented propositions to some merchants in which they agreed to audit their bills on a basis of being paid one-half the amount which they might recover. Shortly afterwards, one of these young clerks, as the result of auditing, went into the office of one of the large trunk lines and

presented 53 claims for over-charge in *one* day. Shippers and merchants should be ashamed of their method of conducting business, when it is necessary to resort to this means of straightening out their traffic matters. There are men who advertise as claim agents or claim bureaus, and make a business of auditing freight bills, collecting claims on a commission basis. Refunds aggregating a very large amount have been obtained through claims for overcharge caused by incorrect routing or improper Classification rating. The employment by shippers of competent traffic men and the establishment of traffic departments would be not only a protection from loss, but a profitable investment, and would render unnecessary the employment of the service described above.

In auditing freight bills, honesty of purpose should be demonstrated and, if undercharges are discovered, payment should be made to the interested carrier. If this method is employed the traffic men will experience no difficulty in collecting just claims and most cordial relations will be maintained with the carriers.

Again let us emphasize the fact that one skillful traffic man may constitute an efficient traffic department and the foregoing paragraphs demonstrate clearly that a traffic department is a necessary adjunct to every industry engaged in commerce.

Weighing Freight.—One of the expert traffic managers of New York City, employed by the

largest concern in its particular industry, having branches in almost every large city in the United States, has given a practical demonstration of the efficiency of his department. One of the plans inaugurated by him was to install scales in each store and to require the manager to weigh every package of L.C.L. freight as soon as it is received from the railroad as well as all packages received from the express companies, because many errors were made in weight. For instance, a package may weigh 95 lbs., but through carelessness might be billed as 195 lbs. During one month, in one district only, the plan of this traffic manager resulted in a saving of $625. His conservative opinion was that, in one year, the savings thus made in all their districts would amount to over $40,000. His forecast was justified; for, at the end of the year, the president of this large company wrote a letter to the traffic manager stating that the saving by his plan had amounted to nearly $50,000.

He has adopted a further plan of weighing the empty containers of freight received, for the purpose of ascertaining if the containers being used are too heavy. If so, he issues specific instructions to shippers to use containers of the right weight.

Chapter 11

SHIPPING AND RECEIVING DEPARTMENTS

COLLATERAL READING: In the Consolidated Classification—Rules of the Classification.

Section 1

Shipping Department Practice

Procedure With Outgoing Shipments.—A traffic manager's job is by no means confined to a knowledge of classifications, rates, and routes. His job extends into the minute details of his shipping department and into the shipping departments of the concerns from which his company buys goods. While he is the head of his own shipping department, he is also the head of the receiving department. Since incoming freight must be properly routed and packed, the traffic manager is vitally concerned with the purchasing and receiving departments.

Traffic departments may differ in methods of organization, but there are certain practices applicable to all shipping departments, which have been found to be sound and profitable. These practices and procedures should obtain in every shipping department. Let us see what they are.

Packing the Goods Properly.—The proper packing of goods for shipment is an obligation which the company owes not only to itself, but to

its customers. It stands to reason that goods should be packed in such a manner as will protect them from the wear and tear of transportation. Proper packing is also a form of insurance to which the consignee is entitled. It is the traffic manager's job to devise, or have some one devise, the very best form of packing suitable for the goods.

Among the things which must be taken into consideration in devising containers are strength and weight of the material, and bulk. Fiber containers, for example, are now used instead of wooden boxes for many commodities. They cost, usually, about 50 per cent less than wooden boxes and they reduce freight bills. They thus effect a saving to the shipper and to the buyer both. As an illustration of this fact, the traffic manager of one of our largest, nationally known concerns decided to change from wood to fiber containers for several of their commodities. The saving thereby in freight cost alone amounted to over $26,000 during one calendar year.

Marking: Put Right Marks on the Package.—Each package in an L.C.L. shipment should be properly and legibly marked with brush or stencil, showing the name of consignee, street address, city or town, county (if there are two or more places of the same name in the state), state, and the station shown on shipping directions.

Every package of L.C.L. freight should be marked exactly as consigned in the bill of lading.

It is advisable to mark packages with a symbol or number for the purpose of identification. The *order number* seems to be the only absolutely reliable means of identifying "astray" and "over" packages, and should always be used. Where several packages constitute a shipment, the order number should be shown and each package should bear a serial number. A symbol or number *must be marked* on all L.C.L. packages consigned "To Order." As the Order bill of lading is a negotiable document, it is necessary that the identical marks shown on the packages which it covers must be shown also in the bill of lading, in order that there may be no error in delivery.

While transportation companies require their agents to compare the shipping receipt with the marks on packages, and to call upon the shipper for correction if a discrepancy between the two is found, this does not relieve the shipper of the responsibility of marking packages in accordance with the shipping receipt. Inasmuch as improper marking is directly responsible for the majority of "astray" packages, careful attention should be given to having packages marked exactly right.

Railroad companies do not require marks on packages shipped in carloads; but each package of a carload shipment, which is transported by a boat line for part of its journey, should bear distinguishing marks, so that it may be identified in case of separation from the remainder of the shipment. These special marks should also be shown in the bills of lading.

Weight Should Go on the Package.—Where L. C. L. shipments are not forwarded at an authorized estimated weight, they should be weighed. The weight thus ascertained, or the estimated weight, should be marked on packages and shown in bill of lading.

Address on the Bill of Lading.—The bill of lading should show the name and address of consignee, and both this address and all marks in the bill of lading should be identical with the marking on the package or packages which the bill of lading covers.

Description of Articles in Bill of Lading.—When there is a question as to the proper description of shipments, which, on account of their unusual character, are apt to be improperly classified by transportation lines, it should be brought to the attention of the traffic manager.

Packages containing premium articles taking higher rates than the goods with which they are shipped, are subject to higher rates than would apply if the premium articles were not included. Questions of this kind should be referred to the traffic manager, for advice as to description in bills of lading, rates, etc.

Many articles are frequently improperly classified by transportation companies, on account of erroneous description in bills of lading. By observing proper forms of description, as illustrated below, over-charges and claims will be avoided.

ARTICLE	PROPER DESCRIPTION
Advertising matter, printed.	Printed advertising matter.
Advertising matter, not printed.	Advertising matter.
Boxes, wooden, set up.	Common wooden boxes.
Boxes, wooden, knocked down.	Box shooks.
Boxes, paper, set up.	Paper boxes, S. U.
Boxes, paper, knocked down.	Paper boxes, K. D. flat.

(See complete list in Consolidated Classification)

Packing List.—In Export Trade it is the custom to make out a packing list in triplicate showing the exact contents of each package. One copy is placed inside of the package, one copy is sent to the consignee and one copy is retained by shipper for his file. The packing list should be signed by the employee who packs the goods.

If the packing list were used in domestic trade, many claims would be avoided and claims for "concealed loss" could usually be collected without controversy. Particularly a packing list would be desirable for such shipments as shoes, hats, hosiery, dry goods, and similar commodities which are liable to pilfering in transit.

Specify the Routing.—When the routing is specified by the purchaser and is shown on order slip, said routing should be complied with after being verified by the traffic department. It is a frequent occurrence for purchasers to request

their shipments forwarded via routes other than the cheapest route and if the routing requested is reasonable it should be respected. When doubt exists concerning the reasonableness of routing thus shown, the Traffic Manager should be consulted. The routing and terminal delivery desired should always be noted on the bill of lading.

When C.L. Rate Applies.—The charge for a small quantity of freight must not exceed that for a greater quantity of like kind; i.e. the charge for a less-than-carload shipment must not exceed the charge for a minimum carload of the same freight at the carload rate. Inasmuch, however, as owners are, as a rule, required to load and unload all freight carried at carload rates, whether handled on sidings or in yards, a charge will usually be made for loading if the carload rate is claimed on a shipment made as a less-than-carload, but not loaded and unloaded by owner.

Increased Minima for Long Cars.—When merchandise, subject to Rule 34 of the Consolidated Freight Classification, is loaded in or on cars 36½ ft. or less in length, it is subject to established minimum carload weights; these weights vary for different commodities. The minimum weight for articles subject to this Rule is increased in proportion as car lengths exceed 36½ ft.

The carrier is not always in a position to supply at short notice cars of the exact length desired by a shipper. Therefore, when a shipper orders

a car of length to suit any particular shipment and, for its own convenience, the carrier supplies a car of greater length than was ordered, the minimum weight for the car ordered shall govern.

Delivery to Carrier.—When deliveries are made to freight stations by truck, they should be made in sufficient time to enable freight agents to forward goods on the same day.

When freight is ready for shipment, it should be turned over to the authorized drayman and receipt obtained therefor. This receipt should be held for the purpose of checking and insuring return of the carrier's receipt.

Care should be exercised to avoid forwarding two or more shipments, covered by separate bills of lading, to one consignee on the same day. Whenever possible, consignments should be consolidated.

Shipping receipts with the notation "Wet" or "Received in the Rain" should not be accepted. If receipts are given with such unusual notation as "Subject to Delay Account of Embargo," etc., the fact should be brought to the attention of the traffic department.

Receipts bearing the notation "Shipper's Load and Count" should not be accepted except in cases of carload shipments which, on account of their nature, cannot be counted by carrier's agents. Whenever it is necessary to accept bills of lading with a "Shipper's Load and Count" notation, especial care should be taken in the matter of car

seal records, and shippers should be in a position to make affidavits as to contents of car in case of loss. In the absence of such records, a claim for shortage may be uncollectable.

Under a strict interpretation of most switching and ferry car tariffs, carriers are not responsible for contents of cars loaded on private or assigned sidings, until after they have been removed from sidings. Upon delivery, therefore, of carload shipments on private siding and until cars are switched, they should be protected by a watchman even though goods have been receipted for.

Prior to loading a carload shipment, the car should be thoroughly examined. Cars with leaky roofs and those which have been rendered unfit for use on account of having been recently loaded with some offensive material, should not be accepted from railroad companies except under written protest.

Disposition of Bill of Lading.—The bill of lading is evidence of shipment and should be carefully handled. The original bill of lading for a Straight consignment should always be enclosed to the consignee with invoice for the value of the goods, and the Memorandum bill of lading should be filed by the shipping department for record purposes.

Classification Sheet.—The shipping department should be furnished with a classification sheet, showing the classification ratings of the particular commodities handled by that department.

Tabulating Freight Rates.—The shipping clerk should be quite familiar with the rates via the standard freight lines and differential routes over which shipments are forwarded to and from his concern. A form similar to the illustration shown on page 144 should be prepared and he should tabulate the rates applicable to his commodities used for his outbound and inbound freight. This tabulation will aid the shipping clerk to check up freight bills quickly and exactly, and may result in considerable saving in transportation charges.

Section II

Purchasing Department Practice

Procedure With Incoming Freight. — The traffic manager is not the head of the purchasing department, but the purchasing agent and the traffic manager should cooperate and keep in closest touch with each other. The latter is, because of his knowledge, in a better position to route incoming freight than is the former, who is an expert in purchasing goods, not in routing them. The purchasing agent should, therefore, specify in his orders the delivery desired by the traffic department.

Notices of arrival of merchandise should be turned over promptly to a drayman who is to get the goods from carrier. If freight should be consigned to a definite station and carrier offers delivery at some other station, report should immediately be made to the traffic manager.

FREIGHT RATES FROM NEW YORK
Rates in cents per 100 pounds, Sept. 1, 1924

TO	1st Class		2nd Class		3d Class		4th Class	
	Standard	Differential	Standard	Differential	Standard	Differential	Standard	Differential
Chicago	142	132	124½	116½	94½	88½	66	62
Peoria	156	146	137	129	104	98	72½	68½
Duluth	195	129	169½	113½	129	85½	90	61
Minneapolis	195	153½	169½	136	129	101½	90	71
St. Louis	166	156	145½	137½	110½	104½	77	73

FOR EXPLANATION, SEE PAGE 143

Delivery of a carload shipment on a public track or siding is not accomplished until the consignee or his agent has been notified of the placing of car and he breaks the seals on the car.

Signing for Shipments.—The truckman should be instructed, when signing for a shipment, to sign the name of the trucking company and his own name in full on the freight receipt.

Examining Packages and Containers.—Care should be exercised to see that the truckman, or the party receiving the goods, thoroughly examines them and assures himself that all packages called for on the bill of lading are received and whether or not they are in good condition. Before opening a container it should be carefully examined.

Weighing Inbound Shipments.—All incoming L. C. L. freight shipments should be weighed (when possible) immediately upon receipt. In instances where there is a difference between the actual weight and the weight shown on freight bill, the carrier should be requested to make correction to the proper weight. Failing to have the correction made, the matter should be reported at once to the traffic manager. The weight as shown on the bill of lading should be compared with the scale weight, and where shippers do not show correct weight in their bills of lading or do not show any weight, report should be made to the traffic manager, giving date shipment was received, correct weight, contents, name of shipper,

and name of carrier issuing bill of lading and its date.

Record of Shipments Received.—The shipping clerk should enter all shipments received and keep complete record thereof, as provided in a Freight and Express Entry Record, furnished by the traffic department.

Shipments Put in Storage by the Carrier.—Report should be made to the traffic manager concerning all shipments which are placed in a public warehouse by the carrier, because they were not removed within the free storage limit. When shipments are placed in a public warehouse by the carrier, on account of not being removed within the free storage limit, a full investigation as to the cause of such action by the carrier should be made and a full report should be sent to the traffic manager.

Checking Freight Bills. — The freight bills should, as soon as received, be turned over to the rate clerk for the purpose of checking the rates, calculations, and classification.

Accepting Delivery of Short Shipments.—Truckmen should be instructed, when taking delivery on a shipment which is not complete, to give receipt for the actual number of packages received and, if possible, to have the agent make and sign a notation on the face of the freight bill as to the number or quantity short and un-

delivered. If the short freight is not delivered within thirty days, claim should be filed.

Tracing Delayed Shipments. — Invoices and bills of lading should be checked every 10 days. When shipments are 15 days overdue, the agent of the delivering carrier should be requested to start a tracer.

Inbound Carload Shipments.—On receiving freight from solid cars, the car doors should be examined (both end and side doors) before seals are broken, in order to be sure that the seals have not been tampered with. The number of each seal should also be taken.

Chapter 12

DRAYAGE

Section I

Development.—From primeval time methods for conveying merchandise have been devised and the stages of progression from the man who carried a bundle on his head or back have been briefly as follows:

The pack horse,
The ox-cart,
The wagon,
The horse-drawn truck, and

The giant horse-drawn swing, baby and reach trucks capable of carrying single loads of from ten to a hundred tons, or even any weight that the pavements could sustain.

Finally, we have reached the stage of the modern motor truck that has half the weight carrying capacity of a standard freight car.

Motor Truck Displacing Less-Than-Carload Freight Trains.—Highway improvement and terminal costs are making it possible in many instances economically to utilize motor trucks to replace or to continue the rail movement of freight. Hundreds of miles of local freight service formerly maintained with railroad cars has been susperseded by the use of motor trucks and those in control of our largest railroads are at

the moment definitely committed to the development of this policy to the end that short hauls of freight which are unprofitable to the railroads will at their instigation be superseded by motor truck service. In addition to this there are, of course, the long-haul motor transportation companies which to a degree compete with the railroads and the merchants who truck between their factories and markets.

Economy of Motor Truck Service.—There is no question that the motor truck is an economical factor in transportation, but motor trucking at present is not organized on a systematic basis. It is keenly competitive and, on account of this fact, motor truck companies operate largely on a contract basis at fluctuating rates. Stability of service and rates would add greatly to the value of this agency of transportation.

Under the usual method of handling L. C. L. shipments by rail, at least six handlings are necessary; namely,—

(1) Loaded on the shipper's truck and hauled to the freight station.

(2) Unloaded at the railroad station platform.

(3) Loaded into a freight car.

(4) Unloaded at railroad station at destination.

(5) Loaded on the consignee's truck.

(6) Unloaded at the store door or warehouse of consignee.

If shipments are transferred en route, two or more handlings are required. If the shipments are transported entirely by motor trucks, only two handlings are required; viz., loaded on the truck at shipper's establishment and unloaded from truck at store door or warehouse of consignee.

When consideration is given to the fact that labor is becoming an increasingly heavy factor in transportation costs, the possible economies by handling short-haul L. C. L. shipments by motor truck are readily observed.

Long Distance Trucking. — Highways and volume of freight permitting it is usually practicable to truck within a radius of fifty miles and, of course, under exceptional conditions for longer distances. Aside from expediting the movement of freight between points of origin and delivery by the use of motor trucks the following elements are to be considered in comparing the cost of motor truck transportation with that by rail.

Packing.—If goods are moved between point of origin and consignee in the same vehicle, a considerable saving may be accomplished in packing and marking over the need for packing to withstand several handlings which might make marks illegible.

Storage.—If within motor trucking distance of market goods may be stocked or stored at factory for less than it would cost to store them

at the point where sold and they would be available almost as quickly.

Trucking to Freight Station.—Lacking a railroad siding goods would have to be trucked to railroad station.

Freight Charges.—This fact should be considered: When shipping by rail or water it is required that many articles be packed in boxes or crates, and freight charges on the articles are *increased* by the weight of these containers. But when shipping direct by motor trucks, it is frequently possible to eliminate cases or crates in the packing of merchandise and thereby the transportation charges are *reduced,* in addition to the saving of cost of containers.

Trucking Charge.—There will, of course, be the charge for trucking from depot to consignee.

To the above may be added the consideration of deterioration of goods through successive handlings, the likelihood of actual damage, pilferage or loss as well as the need for contracting with two or more transportation agencies if goods are shipped by freight.

Local Trucking

Choice of Equipment.—In considering the problem of local trucking, selection of motive power may be made from three types of vehicle; viz., horse-drawn, electric and gasoline, and their relative operating cost per unit is in the order

named, the horse-drawn being the least expensive and the gasoline truck the most expensive.

The dependable maximum radius of each is:

Horse truck .....15 miles per day
Electric truck .....30 miles per day
Gasoline truck ....over 30 miles per day

The range of the heavy duty electric truck may be increased by installing a larger battery, by boosting or by replacing batteries during the day, while in the lighter electric trucks, a greater radius is standard. On the other hand, if operated over hills, on heavy roads or if overloaded the efficient mileage of the electric will be reduced.

Manner of Procuring Equipment.—Trucking may be done by the purchase and operation of trucks by the merchant, if his business is sufficiently large to warrant it; by the hire of trucks on a daily, weekly, or yearly basis from a public truckman, or by the employment of a public truckman paying a rate agreed upon for each package or hundredweight. In some instances, a combination of these arrangements may be worked out to good advantage, as for example owning or contracting for trucks up to an assured minimum requirement and having additional work by a public truckman through hiring trucks on a daily basis, or at a price per hundredweight or package.

In reaching a decision with regard to the above, it is well to remember the old adage "every man to his trade." The handling of labor, the loading of trucks, maintaining a surplus of equipment

to replace that which is out of use for repair and painting, the taking care of trucks so that they do not break down on the road and the taking care of them when they do, as well as the purchase of accessories, care of tires and the maintenance of an operating organization are all a part of the day's work in the routine of a responsible public truckman. If you are not prepared to assume this detail, it is probable that you can afford to pay a profit to a public truckman to do your work and have it done for less than it would cost to do it yourself.

Costs vary so greatly according to local conditions and methods of operators, that no attempt is made to give cost figures, as the prevailing rates in any locality may easily be ascertained.

Elements of cost.—The following enter into the cost of truck operation and to a degree, depending upon locality, have to be reckoned with.

Licenses.—State licenses have to be obtained, the cost depending upon the rate fixed by the laws of the state. A chauffeur must be hired for motor truck operation.

City.—In most cities a Public Cart License must be obtained.

Custom House.—If freight in bond is to be trucked, a custom house license must be procured in connection with which a security bond is required to guarantee against the loss in transit of

bonded goods. The words "Custom House License No." must be painted on each truck used for freight in bond.

Insurance.—Accident Liability and Property Damage—No cost of truck operation may be accurately estimated without the liability for personal injury and for property damage being definitely determined by the payment of insurance premiums to cover those contingencies. In these days of high awards in suits for personal injury it is well to insure in amounts ample to cover any judgment that may be obtained, particularly in view of the fact that insurance in excess of minimum amount may be had at a relatively low cost.

Collision.—Whether or not collision insurance, which assures payment for damage to your vehicle by another or by contact with obstacles, should be carried by you, is for you to determine by contrasting the likelihood of sustaining damage and of securing payment for such damage from one with whom your vehicle collides against the cost of collision insurance.

Fire.—Both the truck and goods on truck should be insured against loss by fire while on the road or in a garage or stable.

Workmen's Compensation.—Most states require that workmen's compensation insurance be carried by employers to protect employees in the event of injury while at work. The rate for this insurance varies according to the industry in which

the man is employed, for example, the rate for the trucking industry may be 5% and for bridge workers 8%. These rates in turn are subject to variation dependent upon the experience of the individual employer, so that one may have to pay more than the rate fixed for his industry if injuries to his employees are over costly, or if the cost is low his rate may be bettered.

In connection with the placing of compensation insurance, it is well to remember that payment for the accident of today may extend over a period of years to come. Therefore, care should be exercised in the selection of the insurance company, for if it fails to meet awards, you must pay.

If you hire a truck from another and he fails to comply with the law that requires him to carry Workmen's Compensation Insurance and his man on the truck employed by you is injured, you are responsible for any workmen's compensation award in the event that his employer does not pay. Therefore, it is incumbent upon you to see that the man who does your trucking carries Workmen's Compensation Insurance.

In New York State the law provides that if a minor is improperly employed and is injured in such employment, he is awarded double compensation, of which the insurance company may not pay more than one half—the balance to be paid by the employer. Therefore, no minor should be employed by you or by anyone from whom you hire equipment without having working papers made out in proper form.

Theft.—Insurance against the theft of single packages, or of truck loads from trucks is hard for a public truckman to obtain owing to the unhappy experiences had by insurance companies who in the past have issued these policies. A common practice is for the truckman to limit his liability for the loss of any package to the amount of Fifty Dollars, which should be within his capacity to pay, but the merchant who carries a transit policy must secure permission from his insurance company to accept this limitation from his truckman, which upon the approval of the truckman by the insurance company, is issued in the form of a "rider" to the transit policy for which an additional premium is charged.

Burglary.—Burglary insurance policies are issued covering merchandise upon trucks, while in garages or stables overnight. If, as is the usual form of policy, evidence of forcible entry must be shown, you are not covered in the event of a hold-up or if the loss is brought about through the collusion of employes. On the other hand, if you have a "hold-up" policy, a burglary may not be covered. Again, while it is unlikely, the safety of goods may be insured in a transit policy from point of origin to consignee. Read your policies carefully to be sure that you are fully covered and that you are not paying for double coverage of the same thing.

In leaving the subject of insurance, the following thought is submitted for careful consideration. Rates for all insurance are made from the ex-

perience of insurance companies in each line and you contribute to the making of your own rate. Do not take the attitude "I should worry, I'm insured"—but endeavor through trying to prevent and trying to minimize payments for losses to lower the cost of your own insurance.

Section II

Operation

Management.—The management of a large trucking company or the drayage equipment of a great industry, operating either motor or horse-drawn trucks, is somewhat similar to the operation of a railroad and a most skilful traffic management is requisite.

Operating.—Trucks are usually sent out from a stable or garage in the early morning and the drivers or chauffeurs are ordered to go to certain points for the purpose of performing some definite task. The trucks are earning money only when loaded and the wheels are moving. The loss by delay in truck movement, particularly in city drayage due to congestion, is a very great item and skilful manipulation is thereby rendered necessary. Endeavors should always be made to have trucks move both ways loaded; i.e., after delivering the initial load, a return load should be secured if possible at the point of delivery or in the vicinity.

Method of Operation by Large Drayage Companies.—One of the largest drayage companies in

this country has a system of operation which is very efficient and a description of the method is as follows:

Two men are assigned to the operating desk upon which are four telephones. The first duty of these men on arrival at their desk is to call the stable and garage on the telephone and receive from the superintendent the day's layout. This report is made into a chart on which is shown the name of each driver or chauffeur, the house number and license number of each truck, and the time of departure. The drivers and chauffeurs have orders to call these men on the telephone as soon as each load is delivered, unless assigned to a particular job for the entire day. New orders are then given, the aim being to have the vehicles move loaded in all directions. At any time during the day these operating men can tell approximately the exact location of each vehicle.

Superintendence. — Foremen in automobile runabouts are patrolling the delivery territory watching the trucks move and giving assistance when necessary—they also keep in touch regularly with the operating men.

Loads which are to be shipped for transportation by steamship or railroad lines are sent out on information received from the foremen, who ascertain and advise the prevailing conditions; i.e., whether or not there is a line of trucks waiting to effect deliveries, and the operators are governed accordingly; loads for the congested

lines being withheld until a more favorable time and loads for the open lines being rushed.

In long distance trucking endeavor is always made to secure a return load and low rates may often be secured through knowledge of the routes of long distance motor truck companies.

Personnel.—It is not possible to give an organization chart of a drayage department or company that could be followed generally, but the chart shown on page 161 would probably serve the purposes of an average drayage department or company.

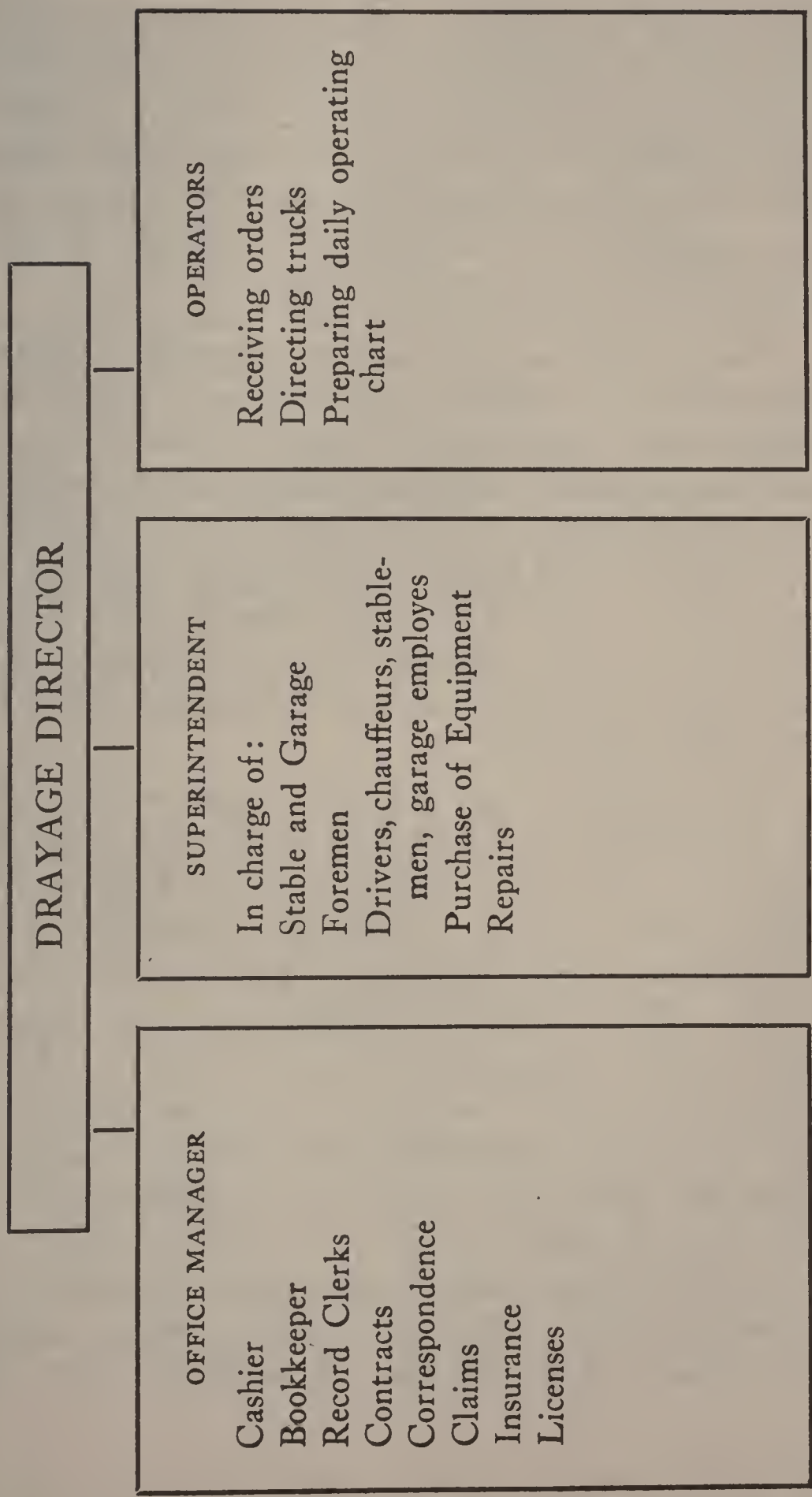
Control of Drayage.—If a business concern owns its drayage equipment, it should be under the control of the traffic manager and the various duties shown in the organization chart should be assigned to competent employes.

The Skilful Drayage Manager.—The Cartage branch of a traffic department is a fertile field for economical improvement. The employment of a skilled drayage manager and the acquisition of an adequate drayage plant would enable many industries to effect a material decrease in cartage expenses.

Section III

Store Door Delivery

Definition.—Store Door Delivery is simply the continuation of the rail or water transportation of freight to the address of consignee by truck


DRAYAGE DIRECTOR
OFFICE MANAGER
Cashier
Bookkeeper
Record Clerks
Contracts
Correspondence
Claims
Insurance
Licenses
SUPERINTENDENT
In charge of:
Stable and Garage
Foremen
Drivers, chauffeurs, stable-men, garage employes
Purchase of Equipment
Repairs
OPERATORS
Receiving orders
Directing trucks
Preparing daily operating chart

and plans to progress the method in moving freight to the efficiency long since attained in the handling of mail and of express matter. A complete system of Store Door Delivery would provide for the continuous movement of freight by one agency or carrier from the address of consignor to the address of consignee.

Present Method of Handling Freight.—Under the prevailing method of handling freight, the shipper must truck it to a freight station, the railroad or steamship company signs a bill of lading, transports freight to its terminal nearest address of consignee and sends the consignee a notice to call for it. This practice is wasteful from every viewpoint and is continued only because of the lack of coordination between shippers, carriers and truck operators.

The consignor has to truck freight to the railroad and his trucking charge is relatively high as against a community trucking service with trucks moving fully loaded. Each light loaded truck is wasteful and their number increases delay at terminals. Beyond this his freight rates are higher because of subsequent lack of economy in handling, for the railroad has to serve the trucks of each individual, multiplying the number of operations as against an organized trucking service. Arriving at terminal, notices of arrival must be sent to consignee and storage space provided at terminals for merchandise until consignee sends for same. The expense of sending trucks of

many consignees and the need for sorting freight at terminals to permit each consignee to select his freight, is costly, increasing terminal overhead and loading charges. Freight may be brought in only to the capacity of terminals and this results in further slowing the movement of freight.

The consignee pays higher trucking charges due to partly loaded trucks, delays at terminals, high loading charges and street congestion.

This spread of waste is reflected in a higher cost for transporting freight than is justified. Some large cities already have in part a store door delivery and the movement to make such an arrangement is national in scope.

Chapter 13

ROUTING

COLLATERIAL READING: In the Freight Traffic Red Book—Routing

Section I

Interstate Commerce Commission Rulings on Routing

Seven Points on Routing.—1. The Interstate Commerce Commission has ruled that the lawful charge on any shipment is the tariff rate via the route over which the shipment moves.

2. That to secure desired delivery and avoid unnecessary terminal or switching charges, the shipper may determine the terminal routing of shipments which are to go beyond the lines of the initial carrier; and that his instructions must be observed.

3. That the carriers may not disregard the instructions of shippers as to intermediate routing, except when the tariff of the initial line dictates the intermediate routing; that is, rates are not applicable except over the routes specifically named.

4. That when such reservation is made in the tariff, where all-rail and rail-and-water rates are available, the agent of carrier must have the shipper designate which of the two he wishes to use, and the agent must not route shipment via a route

that will be more expensive to him, or that does not furnish as good service.

5. That in the absence of specific through routing by shipper, it is the duty of the agent of carrier to route shipment via the cheapest reasonable route known to him, of the class designated by shipper; that is, all-rail or rail-and-water, and via which he has rates that he can lawfully use.

6. That shippers must bear in mind that there is a limit beyond which an agent of a carrier could not reasonably be expected to know, as to terminal delivery or local rates at distant points and on lines of distant roads to, or with, which he has no specific joint through rates.

7. That consignors and consignees should cooperate with agents of carriers in avoiding misunderstandings and errors in routing, and must expect to bear some responsibility in connection therewith.

Importance of Routing.—While it is the ruling of the Interstate Commerce Commission that the agent of carrier must forward an unrouted shipment via the cheapest reasonable route, yet if the shipper does not know the cheapest route, the shipment may be forwarded via a more expensive route and the overcharge thus incurred becomes a loss, because, owing to shipper's lack of knowledge, no claim will be made; hence the necessity for a traffic man who is versed in transportation law and in the application of tariffs. The skillful

traffic man invariably routes his shipments, and also ascertains if the consignments received inbound are correctly routed. When we consider the fact that thousands of unrouted shipments are handled by carriers, it is reasonable to assume that many errors are made. Therefore, by correct routing of outbound shipments and by checking the inbound routing of freight received, a competent traffic man may save a large amount in transportation expenses.

Determination of Route.—The first thing to determine in making a shipment by freight is the name of the railroad station or boat landing at which consignee will receive the goods, and this determination must be based on fact and not on conjecture. The destination and terminal delivery should be stated so definitely that there will be no question as to its location.

The shipping department should be furnished with the current issue of a standard Shippers' Guide and it should be consulted before shipping to an obscure or unfamiliar point, when complete routing directions are not given on the purchaser's order for the goods.

Section II

The Routing Sheet and the Route Map

Routing Sheet.—In order to facilitate the handling of traffic, large traffic departments should have prepared for the guidance of their shipping departments a *Routing Sheet,* the method

and the preparation being governed by the volume of the traffic. It is advisable to make a separate *Routing Sheet* for each State in which goods are distributed.

The specimen Routing Sheets, with Keys, shown on pages 169-176, were prepared by the traffic department of one of the largest industries in this country which forwards and receives freight to and from almost every State, and also has a large foreign commerce. The traffic manager has sheets prepared governing the traffic from its principal factories to practically all of the States, a separate Routing Sheet being made for each State. The specimen Routing Sheets A and B are applicable to the State of Michigan which is located in both the Official and Western Classification territories, and the Routing Sheets C and D are applicable to the State of Kansas, located in the Western Classification territory.

Keys.—The keys furnished are applicable only to traffic from New York City, but the Routing Sheet contains symbols designating the routes from their various plants, a separate key, or keys, being provided for each plant for traffic forwarded from the point at which it is located. The "New York Routing Key—West" shows the routes via which traffic from New York City, destined to points in the Western Classification territory, is routed by this traffic department, and the routes in this key are indicated by letters only. The "New York Routing Key—East" shows the

routes via which traffic is forwarded to all other points in the United States located in the Official and Southern Classification territories, and these routes are indicated by numbered letters or numbers.

NEW YORK ROUTING KEY—EAST

Route Letter	Freight Routing
1....	Erie R R
1a...	Erie R R
1b...	Erie R R c/o G T
1c...	Erie R R c/o N Y C & St L
1d...	Erie R R c/o P M
2....	D L & W
2a...	D L & W c/o Wab
2b...	D L & W c/o Lack Line
2c...	D L & W c/o G T
2d...	D L & W c/o P M
2m..	D L & W c/o N Y C
2p...	D L & W c/o D & B S B Co at Bflo
2q...	D L & W c/o C & B T Co
2t...	D L & W c/o M C
3....	P R R
3a...	P R R c/o S U L
3b...	P R R c/o Emp Line c/o D & C Nav Co
3c...	P R R c/o S U L c/o I C
3d...	P R R c/o Can Sou Line
3f...	P R R c/o Emp Line
3g...	P R R c/o Atl Coast Desp
3h...	P R R c/o Seaboard Desp
3i...	P R R c/o East & Sou Desp
3k...	P R R c/o Sou Ry
3m..	P R R c/o N & W
3n...	P R R c/o C & O
3p...	P R R c/o N S
3q...	P R R c/o Rich-Wash Line
3u...	P R R c/o S A L c/o D & S
3v...	P R R c/o Vir Ry
4....	N Y C
4a...	N Y C
4b...	N Y C
4c...	N Y C
4d...	N Y C
4e...	N Y C c/o Can Sou Line
4w..	N Y C c/o M D T Co c/o L E & W
4x...	N Y C c/o Great Lakes Transit Co.
5....	W S
5a...	W S c/o Wab
5b...	W S c/o N Y C
5c...	W S c/o M C
5d...	W S c/o G T
5e...	W S c/o N Y C & St L
6....	N Y N H & H (Pier 37, E R)
7....	N Y N H & H (Pier 39, E R)
8....	C R R of N J c/o P & R
9....	C R R of N J
10....	B & O
10a...	B & O c/o Cont Line
11....	L V
11a...	L V c/o Traders Desp
11b...	L V c/o N Y C
11c...	L V c/o Wab
11d...	L V c/o M C
11e...	L V c/o G T
11f...	L V c/o P M
11g...	L V c/o N Y C & St L c/o C I & L
11p...	L V c/o Great Lakes Transit Co
11q...	L V c/o C & B Trans Co

NEW YORK ROUTING KEY—EAST

Route Letter	Freight Routing
12....	N Y O & W
12a...	N Y O & W c/o Ont Cent Desp
13....	N Y C c/o D & H
14....	Long Isl
15....	Staten Isl R T Co
16....	C R R of N J c/o B R D
17....	C R R of N J c/o C S D
18....	C R R of N J c/o Sou States Desp
20....	N Y & N J S B Co
21....	Truck
25....	O D T Co
25a...	O D T Co c/o A C L
25b...	O D T Co c/o S A L
25c...	O D T Co c/o P A L
25d...	O D T Co c/o VT & G
25e...	O D T Co c/o N & W Desp
25f...	O D T Co c/o C G D
25g...	O D T Co c/o K D
25h...	O D T Co c/o P A L c/o T C
25i...	O D T Co c/o N & W
25j...	O D T Co c/o C & O
25k...	O D T Co c/o P A L
25m..	O D T Co c/o A C L c/o A & W P c/o M & O
25p...	O D T Co c/o A C L c/o A & W P
25s...	O D T Co c/o N S
25u...	O D T Co c/o N S
25v...	O D T Co c/o Vir Ry
27....	Clyde Line
27a...	Clyde Line c/o A C L
27b...	Clyde Line c/o S A L
27c...	Clyde Line c/o Sou Ry
27d...	Clyde Line c/o G S & F
27m..	Clyde Line c/o Chas F F Line c/o M & O
27t...	Mallory Line c/o A B & A at Bruns
30....	Ocean S S Co
30a...	Ocean S S Co c/o A C L
30b...	Ocean S S Co c/o S A L
30k...	Ocean S S Co c/o C of Ga
34....	C V
34a...	C V c/o Natl Desp
35....	Hudson Nav Co
36....	Joy Line
38....	Bridgeport Line
39....	Fall River Line
40....	Hartford Line
41....	Met S S Co
41b...	Met S S Co c/o G T
41c...	Met S S Co c/o M C
42....	Met S S Co
43....	New Bedford Line
44....	New Haven S B Line
45....	Norwich Line
46....	Providence Line
47....	Blackstone Valley Trans Co
48....	Ben Frank Trans Co
50....	Morgan Line
51....	Mallory Line
52....	Hudson Nav Co
53....	Cent-Hud S B Co
54....	Saugerties Line
56....	Catskill Line
57....	Morton Line
59....	North River S B Co (Str Raleigh)
62....	Merchants S B Co
63....	Middlesex Trans Co
66....	Chelsea Line
67....	Merchants Stamford Line
69....	Merchants Bridgeport Line
70....	N E & T Co
71....	Colonial Nav Co
72....	Thames River Line
73....	Inland Waterways S S Co
74....	Patten Line
75....	Lower Hudson S B Co

NEW YORK ROUTING KEY—WEST

Route Letter	Freight Routing
A.....	L V c/o N Y C & St L c/o C B & Q at St L
AA...	L V c/o N Y C & St L c/o C B & Q at Chgo
B.....	L V c/o N Y C & St L c/o C B & Q at St L c/o Nor Pac at Billings
C.....	L V c/o N Y C & St L c/o C & A
CB...	L V c/o N Y C & St L c/o St L S W at St L
CC...	L V c/o N Y C & St L c/o C B & Q at Chgo c/o Nor Pac
CP...	New Haven Line c/o C P Desp
D....	L V c/o N Y C & St L c/o C B & Q at Chgo c/o Great Nor
DB...	L V c/o N Y C & St L c/o C B & Q at St L c/o Grt Nor at Billings
E....	L V c/o N Y C & St L c/o Mo Pac at St L
ER...	L V c/o N Y C & St L c/o C R I & P at St L
ES...	L V c/o N Y C & St L c/o Mo Pac at St L c/o A T & S F at Kan City
EU...	L V c/o N Y C & St L c/o Mo Pac at St L c/o Union Pac at Kan City
F....	L V c/o N Y C & St L c/o C & N W at Chgo
FU...	L V c/o N Y C & St L c/o C & N W at Chgo c/o Union Pac at Omaha
G....	L V c/o N Y C & St L c/o C M & St P at Chgo
GT...	L V c/o N Y C & St L c/o Goodrich Trans Co
GU...	L V c/o N Y C & St L c/o C M & St P at Chgo c/o Union Pac at Omaha
H....	L V c/o N Y C & St L c/o C G W at Chgo
I.....	L V c/o N Y C & St L c/o I C at Chgo
IM...	L V c/o N Y C & St L c/o St L I M & S at St L
J.....	D L & W c/o Wab
JX...	D L & W c/o P M via Mackinaw City
K....	L V c/o N Y C & St L c/o M K & T at St L
L....	L V c/o N Y C & St L c/o St L & S F at St L
LA...	L V c/o N Y C & St L c/o "Across the Lake"
LE...	L V c/o N Y C & St L c/o Mo Pac at St L
LL...	L V c/o N Y C & St L c/o Frisco at St L
LM..	L V c/o N Y C & St L c/o Mo Pac at St L
LR...	L V c/o N Y C & St L c/o C R I & P at St L
LS...	L V c/o N Y C & St L c/o AT & SF at Chgo
M....	Morgan Line
MG..	Morgan Line c/o I & G N
MH..	Morgan Line c/o G H & H
MK..	Morgan Line c/o M K & T
ML..	Mallory Line
MM..	Morgan Line
MR..	Morgan Line c/o L R & N at N O
MS...	Morgan Line c/o G C & S F
MV..	Morgan Line c/o T & B
MX..	Morgan Line c/o Tex Mid
N....	D L & W c/o Lack Line
R....	L V c/o N Y C & St L c/o C R I & P at Chgo
RR...	L V c/o N Y C & St L c/o C R I & P at St L
RU...	L V c/o N Y C & St L c/o C R I & P at Chgo c/o Union Pac

NEW YORK ROUTING KEY—WEST

Route Letter	Freight Routing
S.....	L V c/o N Y C & St L c/o AT & SF at Chgo
SL....	L V c/o N Y C & St L c/o CB & Q at Chgo c/o D & R G c/o S P L A & S L
SO...	L V c/o N Y C & St L c/o Soo Line at Chgo
SW...	L V c/o N Y C & St L c/o St L S W at St L
TC...	Texas City S S Co
V....	Clyde S S C c/o V T & G c/o V S & P at Vicksburg
X....	L V c/o N Y C & St L c/o Mo Pac at St L c/o D & R G c/o West Pac

ROUTING ORDER—A
TO SPECIFIC POINTS IN MICHIGAN

Be governed by routing shown under group number opposite your city.

New York..	1	Baltimore...	2	Charleston...	3	Louisville....	4
Cleveland..	2	Chicago....	2	New Orleans.	3	Evansville...	4

TO	GROUPS 1	2	3	4
Adrian, Lenawee	2a	10	2k	4b
Alma, Gratiot	2c	3j	2k	25
Alpena, Alpena	2d	3x	2k	25
Ann Arbor, Washtenaw	2t	3j	2k	31
Bad Axe, Huron	11f	3x	2k	25
Battle Creek, Calhoun	2t	10	2k	29
Bay City, Bay	11f	3x	2k	31
Benton Harbor, Berrien	2d	3x	2h	4
Big Rapids, Mecosta	2d	3a	2k	3r
Buchanan, Berrien	2t	10	2k	31
Cadillac, Wixford	3a	3a	2k	3r
Calumet, Houghton	F	F	F	F
Charlotte, Eaton	2t	10	2k	29
Cheboygan, Cheboygan	2t	10	2k	31
Coldwater, Branch	4	4	2k	30
DETROIT, Wayne	2a	3	2k	31
Escanaba, Delat	F	F	F	F
Flint, Genesee	11f	3x	2k	29
Grand Rapids, Kent	2d	3a	2k	3r
Greenville, Montcalm	2d	3x	2k	29
Hancock, Houghton	F	F	F	F
Hillsdale, Hillsdale	4b	4	2k	30
Holland, Ottawa	2d	3x	2k	25
Houghton, Houghton	F	F	F	F
Iron Mountain, Dickinson	G	G	G	G

TO	GROUPS 1	2	3	4
Iron River, Iron	F	F	F	F
Ironwood, Gogebic	F	F	F	F
Ishpeming, Marquette	F	F	F	F
JACKSON, Jackson	2t	3y	2k	4
KALAMAZOO, Kalamazoo	2t	3a	2k	3r
Lansing, Ingham	2t	3y	2k	29
Lapeer, Lapeer	11e	3y	2k	25
Ludington, Mason	2d	3x	2k	25
Manistee, Manistee	2d	3x	2k	25
Manistique, Schollcraft	JX	JX	JX	SO
Marquette, Marquette	G	G	G	G
Menominee, Menominee	G	G	G	G
Monroe, Monroe	2d	3	2k	30
Mt. Clemens, Macomb	2c	3z	2k	29
MUSKEGON, Muskegon	2d	3a	2k	25
Niles, Berrien	2t	10	2h	4
Owasso, Shiawassee	2c	3j	2k	31
Petosky, Emmett	2d	3i	2k	3r
Pontiac, Oakland	2c	3z	K	29
Port Huron, St. Clair	11f	3z	K	29
Saginaw, Saginaw	11f	3x	2k	31
St. Johns, Clinton	2c	3z	2k	29
Sault Ste. Marie, Chippewa	JX	JX	JX	JX
South Haven, Van Buren	2t	2y	2k	31
Sturgis, St. Joseph	11b	3	2k	3r
Traverse City, Gd. Traverse	2d	3a	2k	25

ROUTING ORDER B—TO POINTS NOT NAMED IN A

To points not given in A, refer to Shippers' Guide and ascertain name of railroad on which town is located and use route given below for points on that railroad. If town for which shipment is intended is not on a railroad and the order does not show the railroad station at which goods should be delivered, insert the railroad station according to Shippers' Guide and use route to the railroad point.

RAILROADS	GROUPS 1	2	3	4
Ann Arbor	2a	3j	3k	4
Arcadia & Betsey River	2d	3x	2k	25
Boyne City Gaylord & Alpena	2t	3y	2k	3r
Chicago Kalamazoo & Saginaw	2t	3a	2k	3r
Big Four (C.C.C. & St.L.)	4d	10	2h	4
Detroit Bay City & Western	11f	3x	2k	31
Detroit & Toledo Short Line	2c	3a	2k	4
East Jordan & Southern	2d	3x	2k	25

RAILROADS	GROUPS 1	2	3	4
Erie & Michigan Ry. & Nav. Co...	11f	3x	2k	25
Grand Trunk	2c	3z	2k	29
Kalamazoo Lake Shore & Chicago	2t	3a	2k	3r
Ludington & Northern	2d	3x	2k	25
Manistee & Northeastern	2d	3x	2k	25
Michigan Central	2t	3y	2k	31
New York Central	4	4	2h	4b
Pennsylvania	3	3	6a	3
Pere Marquette	2d	3x	2k	25
Rapid	2c	3z	2k	29
Wabash	2a	3a	2k	6
Blaney & Southern (Northern Peninsular)	JX	JX	JX	SO
C. M. & St. P.	G	G	G	G
C. & N. W.	F	F	F	F
Copper Range	G	G	G	G
Duluth South Shore & Atl.	JX	JX	JX	F
Escanaba & Lake Superior	F	F	F	F
Manistique & Lake Superior	JX	JX	JX	SO
Mineral Range	F	F	F	F
Soo Line	JX	JX	JX	SO
Munising Marquette & S.E.	JX	JX	JX	F
Ontonagon	G	G	G	G
Wisconsin & Michigan	G	G	G	G

ROUTING ORDER—C
TO
KANSAS

Be governed by routing shown under group number opposite your city.

New York..	1	Baltimore...	2	Charleston...	3	Louisville....	4
Cleveland...	2	Chicago....	2	New Orleans.	3	Evansville...	4

TO	GROUPS 1	2	3	4
ABILENE, Dickinson	S	S	ES	S
Almena, Norton	R	R	ER	ER
Altamont, Labette	L	L	LL	L
Altoona, Wilson	E	E	E	E
ANTHONY, Harper	S	S	ER	ER
ARGENTINE, Wyandotte	S	S	ES	S
ARKANSAS CITY, Cowley	S	S	LL	L
ATCHISON, Atchison	R	R	E	E
Atwood, Rawlins	AA	AA	A	A
Axtell, Marshall	E	E	E	E

TO	GROUPS 1	2	3	4
Beloit, Mitchell	E	E	E	FU
Burlington, Coffey	S	S	K	K
Calvert, Norton	R	R	ER	ER
Carden, Marshall	EU	EU	EU	EU
Chapman, Dickinson	EU	EU	EU	EU
CHERRYVALE, Montgomery	L	L	LL	L
COFFEYVILLE, Montgomery	K	K	K	K
CONCORDIA, Cloud	AA	AA	E	E
Ellsworth, Ellsworth	L	L	LL	L
EMPORIA, Lyon	S	S	K	K
FORT SCOTT, Bourbon	L	L	LL	L
GALENA, Cherokee	L	L	LL	L
GREAT BEND, Barton	S	S	E	E
Hanover, Washington	AA	AA	A	A
Hays, Ellis	EU	EU	EU	EU
Hollis, Cloud	AA	AA	A	A
HORTON, Brown	R	R	ER	ER
HUTCHINSON, Reno	R	R	ER	ER
INDEPENDENCE, Montgomery	S	S	E	E
LEAVENWORTH, Leavenworth	R	R	E	E
Logan, Phillips	E	E	E	E
Lorraine, Ellsworth	L	L	LL	L
Lyons, Rice	L	L	LL	L
MANHATTAN, Riley	R	R	ER	ER
Marysville, Marshall	EU	EU	EU	EU
Morganville, Clay	ER	ER	ER	ER
Mound City, Linn	E	E	E	E
Oakley, Logan	S	S	E	E
OTTAWA, Franklin	S	S	E	E
PARSONS, Labette	L	L	LL	L
PITTSBURG, Crawford	L	L	LL	L
Plaster Mill, Marshall	E	E	E	E
SALINA, Saline	E	E	E	E
TOPEKA, Shawnee	R	R	ER	ER
Troy, Doniphan	R	R	ER	ER
Viola, Sedgwick	S	S	E	E
WELLINGTON, Sumner	R	R	ER	ER
WICHITA, Sedgwick	R	R	LL	L
WINFIELD, Cowley	L	L	LL	L
Winona, Logan	EU	EU	EU	EU
Yale, Crawford	E	E	E	E

ROUTING ORDER D—TO POINTS NOT NAMED IN C

To points not specified, refer to the Shippers' Guide and ascertain name of railroad on which town is located and use route given below for points on that railroad. If town for which shipment is intended is not on a railroad and the order does not show the railroad station at which goods should be delivered, insert the railroad station according to the Shippers' Guide and use route to the railroad point.

	GROUPS			
RAILROADS	1	2	3	4
Atchison, Topeka & Santa Fe	S	S	ES	S
Chicago, Burlington & Quincy	AA	AA	A	A
Chicago, Rock Island & Pacific	R	R	ER	ER
Kansas City, Clinton & Springfield	S	E	LL	E
Kansas City, Mexico & Orient	S	E	LL	EG
Kansas City Southern	S	S	LL	E
Kansas, Oklahoma & Gulf	E	E	LL	E
Leavenworth & Topeka	R	R	E	E
Midland Valley	S	S	LL	L
Missouri, Kansas & Texas	K	K	K	K
Missouri Pacific	E	E	E	E
Salina Northern	EU	EU	EU	EU
St. Joseph & Grand Island	R	R	E	E
St. Louis, San Francisco	L	L	LL	L
Union Pacific	EU	EU	EU	EU
Wichita Northwestern	S	S	ER	ER

Interpretation of Routing Sheet.—The following examples illustrate how routing is determined: As soon as the destination is located on Routing Sheet, the index number or letter indicates the key applicable; i.e., Key-East, Key-West.

For shipments to Alma, Gratiot County, Michigan, this company has selected the route designated by the characters "2c." "New York Routing Key—East" shows the route "2c" as D., L. & W., c/o G. T.

Calumet, Houghton County, Michigan, is in the Western Classification territory and the route selected is designated by the letter "F."

The "New York Routing Key—West" shows the "F" routing to be L. V. c/o N. Y., C. & St. L. c/o C. & N. W. at Chicago.

For shipments to Leavenworth, Kansas, the routing selected is designated by the letter "R." The "New York Routing Key—West" shows the "R" routing to be L. V. c/o N. Y. C. & St. L. c/o C. R. I. & P. at Chicago.

Madison, Greenwood County, Kansas, is located on the Missouri Pacific Railroad and is not included in the points named on Routing Order C. The Routing Order D shows that the routing selected for the points on the Missouri Pacific Railroad is designated by the letter "E." The "New York Routing Key—West" shows the "E" routing to be L. V. c/o N. Y. C. & St. L. c/o Mo. Pac. at St. L.

It is not our intention to convey the idea that the Routing Sheets shown in this book indicate the correct or preferred routing of freight forwarded from New York City to points in Michigan and Kansas. The routing shown is the preference of the traffic manager of this large industry. Other traffic managers would probably prefer some other routes, being governed largely by the location of their industries.

Map of Transportation Lines.—The traffic man should be so familiar with this map that he can trace the main lines of the important carriers and should know the merits of the various systems, their relations to each other, the large railroad centers and their junctions.

The map furnished with this course should be carefully studied in order that the principal arteries of traffic will be constantly visualized in the student's mind.

This map is not intended to be used for practical purposes, but simply to give a bird's-eye view of the principal transportation systems of our country. In order to determine the route for a shipment, standard guides should always be consulted.

It will be observed, in studying the map, that the important gateways, or junctions, and also the important terminals are represented by solid red circles. The key to the map is shown in the lower right-hand corner and it will be of assistance in locating the various lines. The table in the lower left-hand corner shows the short line distance between the important railroad centers in the United States.

Use of Railroad Map.—A good method of learning how to select a route to a competitive point is to consult an official railroad map and trace the course of a particular railroad, for the purpose of ascertaining the points where it crosses other lines, whether it is direct or circuitous, and the lines with which it connects at various junctions.

Section III

Ignorance of Fundamentals Invites Loss

Traffic Inquiry.—Recently an eminent traffic man in addressing a large number of the members of a traffic club, asked them how and why they would route freight between two certain points, and not one volunteered an answer. The great fault with the method of transacting transportation business is that it is performed in a mechanical manner and the *reason why* is not considered. If a man will stop to ask *why* he does a certain thing or why it could not be done better some other way, he will acquire one of the fundamentals of success.

Not very long ago a traffic man asked a large New York shipper via what line he was forwarding his shipments to a certain concern in Chicago and he replied that he was shipping by the New York Central Railroad. When asked why he patronized that line, he said, "Because I have always shipped via that line and I like the New York Central Railroad." "Don't you know," said the traffic man, "that if you shipped by the Pennsylvania Railroad you would save your customer a considerable amount of cartage?" He did not know, and it had never before been brought to his attention, but he said that he would investigate and hereafter use the lines having the nearest terminals to his customers.

Custom versus Knowledge.—Many shippers patronize a particular line simply because of cus-

tom, or because it is well known and liked. They do not know that by forwarding some of their shipments via other lines they might save cartage expense to their customers, and that occasionally differential lines may be used advantageously. Inbound shipments are frequently received at terminals quite distant from the consignees' places of business, and as a matter of custom they send for the freight without complaint, not realizing that if they would keep in touch with their purchasing department and furnish it with proper directions for terminal routing, a large unnecessary expense would be saved.

Efforts of the Merchants' Association.—The Merchants' Association of New York for a long time has been endeavoring to educate its members on two points:

1. To get *purchasers* to specify in their orders the terminal delivery desired.

2. To have *shippers* write the terminal routing in the bill of lading.

Their efforts have been very successful, but the country is large and many merchants still remain in ignorance of the importance of traffic knowledge and the necessity of a traffic department. Even one skillful traffic man may constitute an effective traffic department.

Chapter 14

DEMURRAGE AND STORAGE

COLLATERAL READING: In the Freight Traffic Red Book—National Car Demurrage Rules and Charges; Storage.

Section I

Demurrage Rules and Practice

Definition of Demurrage.—Demurrage is the charge assessed by carriers in accordance with the Freight Tariff giving the National Car Demurrage Rules and Charges issued by the American Railway Association Tariff Bureau, and applies after the expiration of the free time limit on cars held by or for shippers or consignees for loading and unloading, or for any other purpose. It is also a charge assessed for holding lighters beyond the lay day period.

Necessity for Demurrage Charge.—The purpose of this demurrage charge is to impose a penalty on shippers and consignees for their delay in handling cars or lighters, and is assessed for the purpose of preventing, as far as possible, an unreasonable holding of equipment.

Cars Subject to Rules.—Cars of either railroad or private ownership held for or by consignors or consignees for loading, unloading, forwarding directions, or for any other purpose, are subject

to these demurrage rules with certain exceptions specified in the Tariff.

What Is Included in Loading and Unloading.—LOADING includes the furnishing of forwarding directions on outbound cars.

UNLOADING includes the following requirements:

1. Surrender of bill of lading on shipments billed "to order."

2. Payment of lawful freight charges when required prior to delivery of the car.

3. Furnishing of a "turnover" order (an order for delivery to another party), after car has been placed for delivery and no additional movement of the car is made.

Free Time Allowed.—Forty-eight hours' (two days) free time will be allowed for loading and unloading all commodities, except that only twenty-four hours' (one day) free time is allowed under the following conditions:

1. When cars are held for reconsignment, reshipment, or in transit on order of consignor, consignee or owner.

When a car is placed for delivery at destination a "turnover" which does not involve an additional movement of the car is not a reconsignment.

A reshipment is the making of a new contract by which, under a new rate, the original lading, without being unloaded, is forwarded in the same car to another destination.

2. When cars, destined for delivery to or for forwarding by a connecting line, are held under tariff regulations for surrender of bill of lading on payment of lawful freight charges.

3. When cars are held in transit and placed for inspection or grading. An exception is made on grain held in transit subject to Federal or State inspection at certain cities specifically named in the tariff.

4. When cars are held to complete loading or to partly unload. But, when a car held for unloading is partly unloaded and partly re-loaded, forty-eight hours' free time will be allowed for the entire transaction.

5. When cars contain freight in bond for customs entry and Government inspection.

Computing Demurrage Time.—In computing time, Sundays and legal holidays, but not half-holidays, will be excluded. When a legal holiday falls on Sunday, the following Monday will be excluded. Rule 3 thoroughly explains how time shall be computed.

Notification of Arrival of Freight.—Notice of arrival of freight shall be sent or given to the consignee within twenty-four hours after arrival of car, and such notice must contain car initials and numbers, point of shipment, contents and, if transferred in transit, the initials and number of original car.

When owner requests that original point of shipment be omitted on reconsigned cars, this in-

formation will not be shown on notice of arrival at destination.

When cars are ordered stopped in transit, notice shall be sent the consignee upon arrival of cars at point of stoppage.

Delivery of cars upon other-than-public delivery tracks, or a written notice sent to consignee of readiness to deliver, will constitute notification to consignee.

When any part of the contents of the car has been removed by consignee prior to sending notice, such removal shall be considered as a notice of arrival.

Refused and Unclaimed Carload Freight.—When carload freight is refused, notice of such refusal shall, within twenty-four hours thereafter, be sent by wire to consignor at his expense.

When unclaimed perishable carload freight has not been disposed of within two days after the day on which notice of arrival has been sent consignee, notice shall be sent to consignor by wire at his expense. When *other* carload freight is unclaimed within five days after the day on which notice of arrival has been sent to consignee, a notice to that effect shall be sent to consignor at his expense.

Placing Cars for Unloading.—When delivery of a car cannot be made to other-than-public delivery track or to an industrial interchange track (a track owned by an industrial plant performing

switching service for itself) on account of inability of consignee to receive it, or because of other conditions attributable to him, the car will be held at destination or at the nearest available hold-point. A notice to that effect will be sent to the consignee, and this will be considered *constructive placement.*

When delivery cannot be made on specially designated public-delivery tracks, because such tracks are fully occupied or from other causes beyond the control of the carrier, delivery shall be made at the nearest available point to consignee, unless consignee indicates a preferred available point.

In the event consignee notified the railroad that he refuses to accept delivery at the point named in the notice sent in accordance with the next preceding paragraph, the car will be held awaiting opportunity to deliver at the specially designated track and Free Time will not begin until the first 7 A. M. after the day on which notice of placement is sent.

Cars for Loading.—Cars will be considered placed when actually placed or held on orders of the consignor.

On empty cars placed for loading and not used, demurrage will be charged from actual or constructive placement until released, with no Free Time allowance.

Demurrage Charges.—At the expiration of the free time allowed, demurrage charges per car per day, or fraction of a day, will be made until the car is released. For each of the first four days

the demurrage charge is $2.00 per day; and for each succeeding day the charge is $5.00.

Track Storage. — At some terminals where railroad facilities are limited, in addition to the demurrage charge for cars placed on public-delivery tracks, there is a track storage charge, but this charge must be covered by a lawful tariff.

Section II

Demurrage Claims

When Demurrage Charges Are Not Allowed. No demurrage charges are to be collected when detention of car occurs through any of the causes named in the following paragraphs. Any charges assessed or collected under such conditions shall be promptly cancelled or refunded by the carrier.

1. Weather Interference. When the condition of the weather during the prescribed free time is such as to make it impossible to employ men or teams in loading or unloading, or impossible to place freight in cars or move it from cars without serious injury to the freight, the free time is extended. This also applies to shipments frozen while in transit and to the inability of shippers or consignees to load or unload freight because of high water or snow-drifts. However, this rule does not absolve the consignor or the consignee from liability for demurrage, if others similarly situated and under the same conditions reasonably could and did load or unload cars during the same period of time.

2. Bunching. (a) When, by reason of delay of carrier in filling orders, cars are placed for loading in numbers in excess of daily orders, the shipper is allowed such free time for *loading* as he would be entitled to had the cars been placed as ordered.

(b) When, due to the fault of any carrier, cars are accumulated and delivered by a railroad in numbers in excess of daily shipments, the consignee is allowed such free time for *unloading* as he would have been entitled to had the cars been delivered in accordance with the daily rate of shipment.

An illustration is as follows: A shipper in point A forwards to a consignee at point B five cars per day, and the consignee at point B can unload the five cars per day when placed for unloading. The consignee at B receives no cars for three days, but on the fourth day twenty cars are accumulated to be placed. No demurrage charge could be assessed against the consignee if he unloads his daily allotment of five cars, as the accumulation of the twenty cars would be what is termed "bunching."

3. Demand of Overcharge. If the agent of a carrier demands payment of transportation charges in excess of tariff authority, no demurrage can accrue during the period of adjustment.

4. Delayed or Improper Notice by Carrier. If a Notice of Arrival is not properly given to consignee, no demurrage charge can be as-

sessed, provided the fault is with the carrier. If a mail notice has been delayed, the postmark on the envelope shall be accepted as indicating the date of the notice. If a notice is mailed on Sunday, a legal holiday, or after 3 P. M. on other days (as evidenced by the postmark thereon), the consignee is allowed five hours' additional free time, but he must mail or send to the carrier's agent, within the first twenty-four hours of free time, written advice as to the actual time notice was received. If he fails to take this action no additional free time is allowed.

5. Error of Railroads Preventing Delivery. If the railroad has made an error in placing cars (i.e., placing recent arrivals ahead of previous arrivals or similar mistakes), demurrage may be assessed only on the basis of the amount that would have accrued except for such errors.

6. Delay by United States Customs. When shipments are delayed by the United States Customs, such additional free time shall be allowed as has been lost through such delay. Goods entering the United States from foreign countries are, as a rule, dutiable and must go through the routine of being cleared through the Customs. Unless Customs entry is correctly made, delivery of the goods will be delayed until all errors and omissions are corrected. Freight of this nature is termed "Import" freight, and is frequently transported by railroads either to interior points or across the continent "in bond." The term

"in bond" means that the goods are under the control and ownership of the United States, and remain so until cleared from Customs. For convenience of importers and to avoid congestion at seaports, the Government maintains customhouses at many of the large interior cities. Cars transporting freight "in bond" are secured with Government seals which must be broken only by an authorized Government officer at destination. Delivery cannot be accomplished without the authorization of this Customs Official.

Average Agreement.—Shippers and receivers frequently make an agreement with the carriers, whereby the charge for detention of cars for loading or unloading shall be computed on the basis of the average time of detention during each calendar month. One credit is allowed for each car released within the first twenty-four hours of free time. After forty-eight hours' free time, one debit per car per day, or fraction of a day, will be charged for the first four days. Ninety-six hours' free time is allowed on cars subject to Rule 8, Section A, Paragraph 2 (see National Car Demurrage Rules, Freight Traffic Red Book). When a car has accrued four debits, a charge of $5.00 per day, or fraction of a day, will be made for all subsequent detention including all subsequent Sundays and holidays.

Credits earned on cars held for loading cannot be used as an offset for debits accruing on cars held for unloading, or vice versa.

If the credits exceed the debits no payment will be made by the railroad on account of such excess of credits, nor can the excess credits for one month be considered in computing the average detention for another month.

A party who enters an Average Agreement is not entitled to cancellation or refund of demurrage charges on account of weather interference, nor because of bunching unless such bunching is caused by strike of carrier's employes.

On written notice either party may terminate the agreement, which notice becomes effective on the first day of the month succeeding that in which it is given.

Section III

Storage Rules and Charges

Definition of Storage.—Storage is the charge assessed by carriers in accordance with the Freight Tariff governing Storage Rules and Charges and applies to freight, either carload or less-than-carload, unloaded at terminals and held after expiration of the Free Time limit.

Freight Subject to Storage.—Freight received for delivery or held to complete a shipment, or for forwarding directions, if stored on railroad premises is subject to the following storage rules:

(a) Carload freight held in cars for delivery, and subsequently unloaded in or on railroad premises, is subject to demurrage rules while in cars and to storage rules after it is unloaded.

(b) Freight upon which the free time allowed under demurrage rules has expired while in cars, and subsequently unloaded in or on railroad premises, is subject to storage rules when unloaded, without free time allowance.

Exception.—These rules do not apply to export or import freight at the port of export or import; nor to domestic freight from or intended for delivery to ocean or lake vessels at the port of trans-shipment.

Notification of Arrival of Shipment.—Notice shall be sent consignee by the carrier, in writing or as otherwise agreed, within twenty-four hours (one day) after arrival of shipments. Such notice must specify point of shipment and name of commodity.

Refused or Unclaimed Freight.—Where shipments have been plainly marked with the consignor's name and address, preceded by the word "from," notice of refusal of less-than-carload shipments shall immediately be sent to consignor.

Unclaimed less-than-carload shipments will be treated as refused after fifteen calendar days from expiration of free time.

Where consignor requests that notice of unclaimed or refused shipments be sent by telegraph, this may be done only at his expense.

Free Time Allowed Prior to Storage.—Forty-eight hours' (two days) free time will be allowed on all commodities for the removal of inbound freight from car or railroad premises, or to com-

plete a shipment and furnish forwarding directions for outbound freight.

Exception.—Additional free time is given to consignees of L. C. L. shipments located at interior or at non-railroad points.

Outbound less-than-carload freight, not accompanied by proper shipping directions which will permit forwarding on the day received, will be subject to storage charges from the first 7 A. M. after receipt of the shipment with no free time allowance.

Shipments of less-than-carload freight held to complete a shipment, or held for reshipment, will be allowed twenty-four hours' free time.

Computing Time.—In computing time, Sundays and legal holidays will be excluded. Where a legal holiday falls on Sunday, the following Monday will be excluded. On inbound freight held for removal and on freight held for re-consignment or re-shipment, time will be computed from the first 7 A. M. after the day on which notice of arrival is sent or given to consignee.

Charges for Storage on Freight.—Freight held on railroad premises in excess of the free time allowed is subject to storage charges as follows:

(a) Freight, except automobiles or other self-propelling vehicles (but not excepting motorcycles or bicycle motor wheels), held in or on railroad premises in excess of free time allowed, will be subject to the following storage charges

per day, or at option of carrier may be sent to public warehouses:

For each of the first five days, 1½ cents per 100 lbs.; for the sixth and each succeeding day, 3 cents per 100 lbs.; minimum storage charge per shipment on freight held beyond free time, five (5) days or part thereof, 25 cents; six (6) days or more, 50 cents.

(b) After expiration of free time, automobiles or other self-propelling vehicles (except motorcycles and bicycle motor wheels) will be subject to a storage charge of three and one-half (3½) cents per 100 lbs. per day, with a minimum charge of $1.00 per machine per day for each of the first five (5) days, and $2.20 per machine for each succeeding day, or at option of carrier may be sent to public warehouses.

(c) (1) When carload freight is unloaded by the carrier for the purpose of releasing needed equipment, the storage charge will be the same as would have accrued under car Demurrage and Track Storage Rules had the freight remained in the car.

(2) When carload freight is unloaded in or on railroad premises by or upon request of consignee or consignor, the storage charges shall not exceed the amount that would have accrued under Demurrage and Track Storage Rules had the freight remained in the car.

Claims for Storage Charges.—The same rules governing causes for non-collection of demurrage charges are applicable to storage charges.

Chapter 15

LIGHTERAGE AND SWITCHING

COLLATERAL READING: In the Freight Traffic Red Book—Lighterage and Switching.

Section I

Lighterage

Definition of Lighterage.—In the large ports of the United States, such as New York, Boston, etc., freight is delivered to vessels or other points by boats called lighters, floats, and barges. This service is called Lighterage.

The Means of Lighterage.—(a) There are two kinds of lighters; viz., steam lighters (meaning those that are self-propelled) and lighters that are towed by tugs.

(b) Barges are usually covered to protect lading from the elements, and are towed by tugs.

(c) Car floats are large flat-bottom boats having tracks laid upon them so that, when they dock at the float bridges, the tracks connect with the railroad tracks and cars are run directly upon the floats. These floats carry from eight to twelve cars and are towed to the various stations by tugs. This service is called "floatage."

Free Lighterage.—Within certain limits, all commodities (other than prohibited articles which are specified in the governing tariff) are entitled to *lighterage free* delivery, when received in car-

load lots. This term, "lighterage free," means that the rates to or from the harbor city, on articles entitled to free lighterage, will include transportation by lighters, barges, or car floats, to or from any dock or vessel within the free lighterage limits. When freight is lightered to points beyond the free delivery limits, a charge is made for the service.

Lighterage or floatage to or from private piers, bulkheads or landing places (when accessible by floatage equipment) will be performed by the carriers if shippers or consignees so arrange.

When rate does not include free lighterage, an additional charge for lighterage is made in accordance with the rules of the specific tariff.

Delivery Orders.—Delivery orders and vessel permits, limiting the time for delivery, will be accepted by carriers only with the understanding that delivery will be accomplished with reasonable dispatch.

Wharfage.—Any wharfage charge, or charge for berthing of lighters, must be paid by shippers or consignees, who must also provide berthing. A wharfage charge is usually assessed when lighters dock at private bulkheads or private piers; also a further charge, called "top wharfage," is frequently made for the privilege of loading and unloading material on a private bulkhead or pier. When lighters land at public bulkheads or piers no wharfage charge is assessed.

Commodities for Which No Carload Weight or Rate Is Provided in the Official Classification.

Commodities (other than prohibited articles) for which no carload rate or weight is provided in the Official Classification will be accorded free lighterage privilege, when loaded to the full stowing capacity of car or when the billed weight of the shipment is 30,000 lbs. or more.

Free lighterage is also extended to some other commodities when billed at a weight of 20,000 lbs.

Except as provided above, a charge in addition to the rate will be made for each delivery of domestic or export freight.

Less-Than-Carload Shipments Received With Carload Shipments.—Less-than-carload shipments of outbound freight (which is lighterage free in carloads) received with a carload or more of lighterage free freight from the same shipper at the same time will be subject to a charge per 100 lbs., in addition to the rate. Less-than-carload shipments of inbound freight (which is lighterage free in carloads) received in the same car with a carload or more of lighterage free freight to the same consignee will be accorded free lighterage.

Part of Carload for Export Delivered for Domestic Consumption.—If a portion of a carload for export is delivered for domestic consumption, the entire carload will be charged at the domestic carload rate, at minimum carload weight (actual if in excess).

Inbound Freight Requiring More Than One Lighterage Delivery. — On carload inbound

freight, one free domestic lighterage or station delivery will be made on each individual consignment on which charges are assessed at the C. L. rate, in such quantity as the consignee may direct, whether the consignment separately occupies a car or is loaded with other consignments in one car. There will be an extra charge for any additional delivery.

On carload inbound freight for export, two free lighterage deliveries will be made of each individual consignment on which charges are assessed at the carload rate, in such quantity as the consignee may direct. There will be an extra charge for any additional delivery. When orders for delivery of three or more parts of a shipment are received, the free deliveries shall attach to those of the greatest weight.

Lighterage Rates on Heavy Articles.—Pieces weighing up to three tons each are usually lighterage free. On pieces weighing over three tons there is a charge for lighterage, said charge being increased in accordance with the increased weight of the pieces. For the purpose of lightering heavy pieces weighing over three tons, special equipment is required. Usually "outside" lighters (not owned by the carrier) are employed for this purpose.

Demurrage Charges on Lighters.—When a lighter reports at its destination, the shipper or owner of the freight, as the case may be, must provide a berth. The first 48 hours after the time the lighter reports (Sundays and legal holi-

days excepted) shall be deemed "lay days," without charge; after which demurrage shall accrue against shipper or consignee, as the case may be, at a rate per day of 24 hours or fraction thereof, which must be specified in the tariff, Sundays and holidays included. The demurrage charge on lighters of ordinary merchandise, in New York Harbor, is $20 per day. On lighters handling heavy commodities the charge for demurrage is considerably higher.

When a lighter contains more than 200 tons from one shipper or from one consignee, an additional 24 hours' free time will be allowed for each additional 100 tons, or fraction thereof, in excess of 200 tons.

Allowance for Loading or Unloading Lighters. An allowance for actual cost, not to exceed a certain amount per net or gross ton as rated, may be made to consignors or consignees for loading or unloading lighterage freight.

Section II

Regulations Governing Switching

Definition of Switching.—Switching is the service performed in moving cars from one track to another, in what is termed "switching limits." This service is divided into three classes as follows:

Terminal Switching,
Intermediate Switching,
Intra-Terminal Switching.

Terminal Switching.—Terminal Switching is the service performed by a railroad in receiving on its tracks, from a connecting line, a loaded car and placing it at a designated delivery point for the purpose of unloading.

It also is the service performed by a railroad in hauling a loaded car from a point on its own road, or on private tracks connecting therewith, and delivering it to a connecting line, when said car is destined to a point beyond the switching limits.

The entire service thus performed, in each of the above instances, must be within the designated limits and on a switching charge published in a tariff.

Intermediate Switching.—Intermediate switching is the service performed by a road in handling a car from one railroad to another, the service performed being within the designated limits and on a switching charge published in a tariff.

This service is performed at the junctions of the various railroads, where cars are en route and turned over to the connecting line for transportation to destination.

Intra-Terminal Switching. — Intra-Terminal switching is the switching movement from one place to another on the same railroad within the switching limits of one terminal. That is, a car is loaded within the switching limits and hauled to another point for unloading within the same switching limits.

Switching Limits.—The area of a terminal, within which switching service is performed under switching rules and regulations, is called "switching limits."

When Charges and Rules Apply.—Freight received at a point within switching limits of a station and delivered to another point within switching limits of the same station is subject to terminal switching charges, as provided in the tariffs applicable.

Switching charges are assessed on the basis of a certain rate per car, as specified in a tariff, and are added to the freight charges, unless the rate includes the switching service.

Less-Than-Carload Freight.—Frequently carriers will handle less-than-carload shipments, in switching service, when loaded in the same car; the aggregate weights of the shipments being not less than a specified weight, usually about 10,000 pounds.

Absorption of Charges.—The act of carriers in including in their rate, from starting point to point of delivery at destination, charges that may have been assessed against the freight for switching service during its transportation, is termed "Absorption of Switching Charges." This action is usually taken by carriers in handling traffic between competitive points, where industries are located on the tracks of competitors.

Railroads operating between competitive points are always competing for desirable traffic and in

order to obtain this traffic they must offer equal rates and service. A line desiring to handle the traffic of an industry located on the tracks of a competitor, at a competitive point, must pay the competing line's switching charge in order to equalize the rates and to obtain at least a portion of the traffic.

The switching charge of one railroad is usually absorbed in the transportation of another railroad, when both lines are competing for traffic between the points involved. At terminals reached by two or more railroads, cars are often loaded at private sidings on the tracks of one railroad, and switched to another carrier to be forwarded to destination. The carrier performing the transportation service in this instance will usually absorb the switching charge.

At destination, the industry to which the freight is consigned may be located on a private siding, connected with the track of a competitor to the one performing the transportation service. In order to accomplish delivery, it would be necessary to have the car containing the freight switched to the competing line, and the charge for this switching would undoubtedly be absorbed by the carrier having the line haul. If the freight is to be transported by the road with which the siding is connected, there is usually no charge for switching.

In both of the cases mentioned, the railroad having the line haul generally absorbs the switching charge in its transportation rate; but a switching charge must be paid in accordance with

the switching tariff, although this tariff may provide for the absorption of the switching charge of the competing railroad.

The illustration on page 204 will demonstrate the reason for absorption of switching charges: A and B are competitive points reached by the Southern Railroad and the Northern Railroad. At point B industry C is located on a private siding connected with the tracks of the Northern Railroad and in order that the Southern Railroad may handle any traffic from point A for industry C, it must absorb in its rate the Northern Railroad's switching charges. Also, if it is desired to handle any of the shipping of industry C forwarded to point A, the Southern Railroad would have to absorb in its rate the Northern Railroad's switching charges.

If shippers at either point A or B desire to ship to industry D, located on a private siding connected with the tracks of the Southern Railroad, switching charges would not be absorbed as there would be no competition for this traffic.

The absorption of the switching charges of competitors is of great advantage to shippers. For instance, many shippers at point A may be located nearer the terminal of the Southern Railroad and it would be far more convenient for them to deliver their shipments to this terminal. Also, the expenses incident to shipping (cartage, etc.) would be less. Hence absorption is of mutual advantage when it equalizes the rate of transportation between competitive points.

ILLUSTRATION OF SWITCHING PROCESS WHEN SHIPMENTS ARE HANDLED BY COMPETING RAILROADS.
SEE EXPLANATION ON PAGE 203.

Chapter 16

DIVERSION AND RECONSIGNMENT

COLLATERAL READING: In the Freight Traffic Red Book—Diversion and Reconsignment.

Section I

Benefits and Requisites of Diversion

An Accommodation to the Shipper.—Freight in carloads may be diverted or reconsigned on carrier's lines, subject to tariff rules, regulations, and charges. When a request is made for diversion or reconsignment, the carrier will make diligent effort to locate the shipment and effect the diversion. The carrier will not, however, be responsible for failure to comply with a request, unless such failure is due to the negligence of its employes. This privilege is accorded to shippers simply for the purpose of accommodation.

Benefit to Be Derived.—Diversion and reconsignment are essential to many industries, particularly those which ship perishable freight, such as fruit and vegetables. Bananas are imported in steamers; floats containing empty cars are placed alongside; the bananas are loaded into the cars, which are immediately started for some city where there is supposed to be a good market. Before the cars reach their destination, it may develop that some other city would offer a better market; then the shippers resort to the privilege

of diversion and the cars are sent to the more favorable market. Other commodities are also similarly handled in accordance with tariff provisions.

Defining the Terms.—While diversion and reconsignment may be strictly interpreted to mean separate acts, generally the tariffs of carriers make no distinction in their diversion and reconsignment rules, for they give the words the same meaning.

According to the carriers' definitions the term "diversion" or "reconsignment" means:

(a) A change in the name of the consignee,

(b) A change in the name of the consignor,

(c) A change in destination,

(d) A change in route at the request of consignor, consignee, or owner,

(e) Any other instructions given by consignor, consignee, or owner necessary to effect delivery, which requires a change in billing or an additional movement of the car, or both.

How Requests for Diversion Are Made.—A request for diversion or reconsignment should be filed with the agent at the point from which the shipment was forwarded, or with a traffic executive of the transportation line having the shipment in its possession. If the shipment has reached its destination, the request may be filed with the agent there.

The request for diversion or reconsignment should contain complete information and specific instructions as to the action desired. Some carriers have regulations requiring that the original bill of lading shall be surrendered in exchange for another. Under a recent ruling, the surrender is temporary and only for the making of a notation showing the reconsignment.

Prompt Action Necessary. — The shipper should be thoroughly familiar with the carrier's tariffs and regulations governing diversion or reconsignment. In order that the services may be performed by the carriers without a heavy expense to the shipper, prompt action on his part is necessary, especially in cases of change of destination to one nearer the point from which the shipment was forwarded.

Conditions on Which Diversion Is Made.— The services are usually subject to the following conditions:

(a) That shipments have not broken bulk.

(b) That shipments cannot be diverted or reconsigned to a point against which an embargo is in force. Shipments made under authorized permits are not subject to this condition.

(c) On "Straight" consignments, the original bill of lading should be surrendered temporarily for the purpose of having notation made thereon as to diversion or reconsignment or other proof of ownership established. On shipments consigned "to order," the original bill of lading

should be presented for endorsement of the requested diversion, or a satisfactory bond of indemnity must be executed in lieu thereof.

(d) Requests must be made or confirmed in writing.

(e) All charges accruing must be prepaid or guaranteed, to the satisfaction of the carrier, by the party requesting the diversion.

Section II

The Expense of Diversion and Reconsignment

Charges for Reconsignment.—A reconsignment entails an expense on the carrier, so that usually a charge is made for the service. However, the rules of carriers may provide for this service without charge to the shipper or at a rate consistent with the service performed.

When Charge Will Not Be Made.—The carriers usually do not charge for a single diversion under the following circumstances:

1. When the order is received at initial billing point before the car leaves, provided the change involves no extra movement of the car.

2. When a car is placed for delivery at destination, and an order for delivery of the contents thereof to other than the billed consignee is presented to and accepted by the agent of the carrier at destination; no change being involved

in billing records, nor additional movement of car.

3. When a change in route is made necessary by an embargo.

Freight Rate Applicable.—Diversion rules and charges usually apply where shipments are handled at local rates, joint rates, or combination of intermediate rates. The through rate, from the point of origin via the diversion point to final destination, in effect on date of shipment, is the rate that must be applied. If the rate from original point of shipment to final destination is not applicable through the point at which the car is diverted, the tariff rates in effect to and from the diversion point will apply, plus diversion charges.

Demurrage on Reconsignments. — Freight stopped, diverted, or reforwarded will, in addition to the diversion charge, be subject to demurrage and track storage charges in accordance with the tariff in effect at point where this stopping, diversion, or reforwarding is accomplished. Switching charges also will be additional.

One Change in Destination Permissible.—Usually only one change in destination of a car will be permitted by the carrier, after it leaves the initial billing point. If a subsequent change is requested, necessitating movement of the car, the consignment will be treated as a re-shipment from point of re-forwarding, and will be charged at the tariff rate therefrom, plus diversion charge.

If a car is stopped short of billed destination after it has had one diversion, charges will be made on the basis of the tariff rates to and from the point at which the first diversion was accomplished, plus a specified charge, in addition to the other diversion charges previously accrued.

Diversion Beyond Rails of Carrier.—When diversion is requested after shipment has passed out of the possession of the initial carrier, or when a request is received too late for the initial carrier to effect the change desired, such request will be transmitted to the direct connecting carrier to which shipment was delivered. The responsibility of the initial carrier will then end, and the shipment will be subject to the tariff rules of the carrier on whose rails the diversion is accomplished.

Charges for Stopping in Transit.—If a car is stopped for orders, on request of the owner, for the purpose of delivery, diversion, or re-forwarding prior to arrival at original billed destination, the tariff charge will be made for such service and the point where the car is stopped will be considered the destination of the freight.

Change of Destination on Orders Given Before Arrival.—If orders for diversion are placed with local freight agent at billed destination in time to permit instructions being given to yard employes prior to arrival, a nominal charge will be made for such service.

Diversion to Points Outside Switching Limits Before Placement.—If a car is diverted or re-forwarded on orders placed with local freight agent after arrival of car at original destination, but before placement for unloading, the regular tariff diversion charge will be made if car is diverted or re-forwarded to a point outside of the switching limits.

Diversion to Points Within Switching Limits Before Placement.—A single change in the name of consignor or consignee, or a single change in the designation of the place of delivery at destination will be allowed:

(a) Without charge if order is received by local freight agent at destination in time to permit instructions to be given to yard employes prior to arrival of car at destination.

(b) At a nominal charge if such order is received in time to permit instructions to be given yard employes between arrival of car at destination and the expiration of twenty-four hours after the first 7 A. M. after the day on which notice of arrival is sent to consignee.

(c) At the regular tariff charge if after arrival at destination such order is not received in time to permit instructions to be given to yard employes prior to the expiration of time as stated in paragraph (b).

Diversion to Points Outside Switching Limits After Placement.—After a car has been placed for unloading at original destination and is re-for-

warded therefrom without being unloaded to a point outside of the switching limits, it will be subject to the published rates to and from the point of reconsignment, plus the tariff reconsignment charge, except that in no case shall the total charge be less than the charge based on a through rate from point of origin to final destination plus the tariff reconsignment charge.

Where all charges have been paid to original destination and delivery accepted, and a new bill of lading (not an Exchange bill of lading) issued to the new destination on the basis of local rate from the re-forwarding point, and without any carrier or agent of the carrier acting for the shipper, the transaction will not be considered as a diversion and no diversion charge will be assessed.

Diversion to Points Within Switching Limits After Placement.—Cars that have been placed for unloading and which are subsequently re-forwarded without being unloaded to a point within the switching limits of a billed destination, will not be subject to a diversion charge, but will be subject to the rate or charge for local movement in addition to the rate from point of origin to billed destination.

"Order-Notify" Shipments Held for Surrender of Bill of Lading at Destination.—Except on cars consigned to or ordered for delivery on public delivery tracks, shipments covered on "order" bills of lading placed on hold tracks and held only for

surrender of bill of lading and necessitating subsequent movement of the car to place of delivery, will be subject to the following:

(a) No charge will be made if bill of lading is surrendered to local freight agent at destination or indemnity bond executed in lieu thereof, or other satisfactory assurance given carrier in time to permit instructions to move the car to be given to yard employes prior to the expiration of twenty-four hours after the first 7 A. M. after the day on which notice of arrival is sent to consignee.

An indemnity bond or other satisfactory assurance in lieu of the original bill of lading covering an "order" shipment will not be accepted except upon certification by the claimant of the shipment that the original bill of lading is not available; and where bond is executed a condition of the same shall be that the bill of lading will be obtained and surrendered immediately upon receipt of advice of the party executing the same that the bill of lading is available.

(b) Regular tariff diversion charge per car will be made if bill of lading is not surrendered to local freight agent or indemnity bond executed in lieu thereof in time to permit instructions to remove the car to be given yard employes prior to the expiration of the time specified in paragraph (a).

Diversion in Transit.—As the term implies, Diversion in Transit means a diversion or recon-

signment between the original point of shipment and the final destination as originally waybilled. Frequently rules of carriers provide for a privilege of this kind, even after arrival at a terminal served by a terminal yard, prior to the time when car is placed for delivery at the original billed destination. A nominal charge per car is usually made for this service.

Charge for Transfers.—When the destination or route is changed, for specific reasons, and the car containing the shipment is forwarded to the new destination or via a new route and it is necessary to transfer the shipment to another car, charge for such transfer is usually assessed against the shipper.

READING ASSIGNMENT No. 1

The Story of Transportation

By

F. T. BENTLEY

F. T. BENTLEY

Traffic Manager, Illinois Steel Company

THE traffic career of F. T. Bentley began in the year 1885 when he became a railroad clerk in Chicago. Prior to that time his experiences had included work as a farm hand, ranch hand, logging camp worker, gold miner, prospector, and big game hunter. But until he entered the transportation game he had not, so to speak, struck his gait.

After four years of service as a railroad clerk, he rose to be an official of the company. Then, from 1894 to 1899 he was traffic manager for the Consolidated Steel and Wire Company and its successor, the American Steel and Wire Company of Illinois.

For the past twenty-two years Mr. Bentley has been traffic manager for the Illinois Steel Company and affiliated corporations, as well as western traffic manager for the Universal Portland Cement Company. His further experiences in traffic matters include a charter membership in the National Industrial Traffic League, and service on its committees. During the war Mr. Bentley served on the Transportation Committee of the American Iron and Steel Institute, in coordinating the war activities of the industry.

THE STORY OF TRANSPORTATION and THE PRICE OF THE JOB AHEAD

AFTER school days are over, the first problem which confronts a young man is: "What line of endeavor shall I follow as a life career?" Is the profession of traffic and transportation one which should be considered favorably as giving equal opportunities with other professions or lines of business?

Husbandry and transportation are the two oldest businesses of humanity and they are also the two basic businesses of the world. Without production, and afterwards transportation to move the commodities produced, the world could not continue to move forward in social, industrial, and intellectual life. Transportation is the chain that binds together men, nations, and races.

The first known transportation occurred when Adam was forced to move from the Garden of Eden and was politely, but firmly, told that in the future he must exist by his own exertions and the sweat of his brow.

The prehistoric man who first conceived the bright idea of breaking in animals as beasts of burden to transport commodities and persons, was one of the greatest early geniuses ever developed; and the man who, first watching a mud-turtle sitting on a log, floating down a stream, conceived the idea of climbing onto the log himself to cross the stream to a heretofore unattain-

able land, was another genius; and probably after trying this adventure a few times had his legs bitten off by some marine monster.

The man who conceived the idea of hollowing out a log with stone implements and the man who, ages later, used fire for the same purpose were the primitive geniuses in boat making. Probably several generations of men propelled their crude boats with small limbs of trees, as nature fashioned them, until another genius evolved the idea of hewing the limb into a roughly shaped, flat-sided paddle, thereby increasing the speed of transportation by water.

After these great achievements, but little progress apparently was made for thousands of years until another genius discovered that, by putting a keel on his canoe, he could guide it more accurately and would not be at the mercy of the winds and tides. The next great achievement in transportation was the discovery that sails could be used and so manipulated as to enable a vessel to follow its course against adverse winds and currents. Then the cities of the Orient began to ship their products to each other via sailing ships of diminutive size, and the day of the maritime adventurer was at hand.

The Phoenecians, who sailed from ancient Tyre on the east coast of the Mediterranean, were the heroes of their time. They passed out through the pillars of Hercules and across the stormy waters of the Bay of Biscay to the far shores of ancient Britain, to obtain cargoes of tin for use as an alloy in making bronze implements and weapons. The great adventurers of their day:

King Solomon, who sent his galleys through the Red Sea and down the coast of Africa to ancient Ophir for gold to build the temple; the ancient Norsemen, who left their havens on the shores of the Baltic and sailed unknown seas to discover Iceland, Labrador, and New England; Christopher Columbus, who sailed from Spain into the unknown West, not knowing when his ships would fall off the earth, to discover a new world—these all were pioneers in transportation and in opening the way for trade. They made it easier to procure the otherwise unattainable, and whetted the appetite of man for more luxuries and a greater variety of commodities.

Queens Isabella of Spain and Elizabeth of England—living in palaces with sand and rushes for carpets, eating from their fingers because forks were not yet invented, and carrying their own knives for use at the table—learned to desire greater comforts and luxuries, and this urge caused them to finance adventurous sailors to discover new lands and to bring back new and strange things.

The early mariner usually owned his ship, loaded it with his own trading goods, and manned it with sailors who had to protect themselves against pirates, savages, and even civilized enemies. If the owner did not captain his ship, a supercargo was placed in charge of the goods with which to barter for the commodities of other countries—he was the ancestor of the modern ship's purser.

A forerunner of the modern bill of lading now came into use, in which the master of the ves-

sel receipted to the owner of the goods and agreed to transport them to destination safely, barring the perils of the sea, the acts of God, interference by a public enemy, or an inherent fault in the goods themselves. These stipulations are still the basis of the present bill of lading.

Our forefathers landed on this continent in sailing ships and settled along the ocean shore or up the rivers as far as the head of navigation, because the ship and the horse were the only means of transportation; and civilization had reached such a point that man was not content to live except where he could be in close touch with his neighbors and interchange commodities with them.

The stage-coach and wagon were the means used by our ancestors for transportation, and the drivers went armed with blunderbuss and pistol to protect the goods entrusted to their care.

The Steam-Horse on Steel Roads

A GREAT forward movement began with the invention of the steam-engine and the expansion which it gave to transportation both by sea and by land. The first railroad in this country was built on the principle of the wagon roads. That is to say, the company built the roadbed, laid down the rails, and held it out for hire to whoever would furnish the vehicle and the horse, who must drag the vehicle over the tracks. Relay Station, at Baltimore, was so named because that was where the horses were changed.

But even when steam locomotives supplanted horses for hauling cars, the speed of travel was

slow compared with present day speed. For example: In 1844, the writer's grandmother and her two children started from Louisville, Kentucky, to visit her parents in Boston, the home she had not seen since prior to her marriage. The little party took a steamboat up the Ohio River to Portsmouth, Ohio, making the journey in three days. From there they transferred to a *fast* passenger canal boat on the then existing canal, from Portsmouth to Cleveland, Ohio. They made this passage quickly in seven days. Transferring there to a paddle-side-wheel steamboat they safely reached the city of Buffalo, intending to take the Erie Canal from Buffalo to Albany, N. Y.

Upon arrival at Buffalo they learned, for the first time, that there was a railroad running to Rochester—sixty-eight miles east. With considerable fear and trepidation they decided to risk themselves on this new-fangled contraption, and made the journey to Rochester, N. Y., in six hours—a speed of a little more than eleven miles an hour. At first they were extremely frightened, but gradually became used to the experience and felt safer when they learned that, under the laws of the State of New York, when the engineer of the train saw a horse he had to stop his locomotive, so as to prevent a collision or to avoid scaring the horse and causing it to run away.

After staying all night at Rochester, they found a second railroad running to Syracuse. Having had good luck with their initial experience, they safely traveled over this road to Syracuse, where they remained over night. Here they found a

third railroad running to Utica. Being, by this time, rather pleased with fast transportation, they took the third railroad for Utica, and the next day found a fourth road, which carried them safely to Albany.

Working Toward Carrier Efficiency

IT is worthy of note that, a few years later, 1853, these four small disjointed roads, referred to in the preceding paragraphs, were consolidated into the present New York Central Railroad. For the charter rights granted these railways, they agreed to abide by the rules, laws, and regulations of the State of New York and were never to charge more than 2 cents a mile for passenger fares. In view of the fact that the United States Railroad Administration and the Interstate Commerce Commission have raised all passenger fares to 3.6 cents per mile, it is interesting to follow the question as to whether the New York Central must disregard the State's order for a two-cent fare or charge, under the Federal orders, 3.6 cents per mile. This case is now in litigation before the Supreme Court of the United States.

It was about 1853, also, that the Province of Nova Scotia, Canada, built a railroad into Halifax, and if a farmer wanted to take his produce to the town he paid his fare and the railroad hauled his commodity free. This was the first government-owned road in Canada, and formed the nucleus of the present Canadian National Railways, which are state owned and controlled. It is an interesting fact that from the date of its

completion to the present time this government-owned railroad has never earned a dividend.

Rapid transportation in the United States, as we reckon it today, is comparatively a new thing. As late as 1868, a traveler from New Jersey, or west, bound for up-state New York, would cross the Hudson River on a ferry to New York City and board the waiting coaches at the Chambers Street "Depot." At leaving time, four horses were attached to each coach and they were drawn through the city up to the Thirtieth Street Station. Here the little bulge-stacked wheezing locomotive was attached, and the train proceeded on up to Albany, sometimes at the rate of 30 miles an hour!

Since those days, transportation has moved forward by leaps and bounds. The writer can remember the old Lake Shore and Michigan Southern 16,000-lb. capacity freight car which had only four wheels. He can remember when a traveler over the Erie Railroad had to change cars at Marion, Ohio, because part of the line had a wider-than-standard gauge. He can remember the old Illinois Central box car which was built so that when it was desirable to forward one at Cairo, the body of the car was lifted up, the trucks were taken out, and other trucks of the gauge of the line on the other side of the river were substituted, because the gauge of the roads north and south of the Ohio river was not the same. Compare these with the modern 120-ton freight car.

The Widening Horizon for Transportation

HAVE the carriers reached their maximum now? Has the transportation world been conquered? Is there anything more to look forward to if your decision is to take up transportation as a life work?

I answer, that transportation is yet in its infancy: the new worlds to be conquered are greater than those which we have reviewed. Outside of this country, think of the countries where transportation, as we know it today, has not yet been established. Africa, South America, Asia, and Eastern Europe have scarcely started to develop their transportation systems.

Ahead of us in this country are new inventions, new improvements, electrification, aerial transportation; so that, if you look forward one hundred years and imagine transportation facilities then, you will probably agree that at this time we are still in the dark ages of transportation.

Is the government going to take over our transportation lines, smother their efficiency with official red tape, and make the transportation employes merely cogs in the existing political machine?

I believe that the answer is, NO!

There was danger of this some years ago, for other countries had tried the experiment. New Zealand, Australia, Canada, France, Germany, Belgium, Italy, and other nationalities have tried the experiment of government ownership of transportation; but the results are far from satisfactory. It takes private capital, personal push, and the selfish urge of personal achievement to

keep up the march of progress, and the country which recognizes this and leaves the initiative in the hands of citizens will always have the best transportation facilities and the greatest mileage. The country having the most and the best transportation will always be most modern, most enlightened, and most prosperous, because the easy and cheap exchange of commodities increases the demands of the people for greater varieties of articles and so promotes the extension of commerce.

Show me the country with the greatest amount of efficient transportation and I will show you the country which is the most advanced and the most prosperous. The most backward countries, from a transportation standpoint, are the most backward in civilization and enlightenment.

The communistic policy of the present Russian government, which destroys the instinct for the acquirement of property, has resulted in decreasing production and in breaking down its transportation system. Russia, and its government, is dying as its transportation facilities decay, and millions of Russians will starve and die for want of adequate transportation.

Transportation's Call for High Caliber Men

THE transportation field continues to be one of the basic interests of human life and offers to the worthy as much inducement as possibly any other pursuit. The complexities of modern transportation have opened, in recent years, a new line of endeavor known as commercial Traffic Management.

What of the traffic manager, his duties and his value? It is a comparatively new profession and is mostly filled from the ranks of railroad-trained men. But the commercial traffic manager must have a wider knowledge and a wider vision than the average railway employe. His functions are as varied as the business of his employer.

Is a new factory to be located? The industrial traffic manager must look over the field. Knowing the raw materials which his company will require, he will be able to point out the places where these raw materials may be assembled at the lowest aggregate transportation costs.

Is the purchasing agent looking for an article? After locating the several places where it may be secured the industrial traffic manager shows which is the cheapest point for buying the goods, where both cost and transportation are considered.

It is the traffic manager who looks after the car supply to move the product after it is made. It is his business to keep his sales department posted as to competitors' transportation costs, as well as his own, to the point where the sale is to be made.

Is there congestion on the railroads? The traffic manager must know how to trace the car and get it through to the customer promptly.

Is the shipment lost or damaged in transit? The traffic manager's knowledge is called in to find the remedy as to what shall be done under the given circumstances. If the shipment is refused at destination or held en route, because of cancellation of the order or failure of the buyer, the traffic manager is on the job to get proper and quick disposition with minimum loss. Is the ship-

ment overcharged? The traffic manager must see that the claim is properly made and collected. Is the classification of his commodities wrong? Are the rates from his shipping points poorly adjusted? It is the duty of the traffic manager to take up with the carriers these irregularities and secure right adjustment.

Are transportation laws faulty? He should assist in a campaign of education to have them amended.

These are only some of the many duties which the industrial traffic manager is called upon to perform. Today he has become one of the main cogs in the industrial machine of commerce.

The Price of the Job Ahead

THE question will probably be asked: "If I decide to make transportation my vocation, how shall I go about it to become a success?"

In ordinary times almost any bright young man can get a job with a railroad. He will be put at a desk and must work at *one* thing all day long. If he works by the clock only, to earn his salary, he will probably never be more than a clerk. If he has the urge of ambition, the "stick-to-it-iveness," and the necessary will-power, he will attain a fair measure of success, because he will not be satisfied to work on that desk month in and month out. He will be inquiring as to *why* he is doing the work which he does and *where* it fits in with other parts of the transportation machine; and he will begin to study, think, and read, and possibly will attend some school where the principles of transportation are taught.

If he will do his work well, if he will do his work better than the average, and will do more work than the average while he is thinking and studying, he will attract the notice of his superiors and will find himself in line for promotion when he least expects it. The key to his success is the fact that he is doing more work and better work than the average man is willing to do; and accurate, organized, continuous work is the only royal road to success.

The average industrial traffic manager graduates into his commercial job from the ranks of the railroad where he has learned transportation; and a good industrial traffic manager has as many opportunities for advancement in his commercial organization as the railroad employe has in the railroad organization. There is room at the top, but the successful aspirant reaches it by climbing over the dead timber of the less forceful, less ambitious, and less efficient men whom he finds on his road.

A man must pay for attainment. We have seen how that the duties of the traffic manager are allied and interwoven with the work of the other departments necessary to the conduct of any large business. To cooperate intelligently with the activities of the other departments, the good traffic manager must be fairly well grounded in all subjects which he, as an executive sitting in meeting with other executives of a large corporation, will be called upon to discuss. Accounting, auditing, banking, business law, corporation finance, correspondence, economics, industrial relationships, management, marketing, organiza-

tion, production,—all these should be familiar to the traffic manager. By this, it is not meant to say that, in order to be a good traffic manager, a man must thoroughly understand all these subjects: that would be well beyond the scope of the average. But to be conversant with the subjects, to understand perfectly, as an executive, all that takes place in the operation of the business—this is essential.

Nor can a business man afford to be ignorant of those fundamental principles on which sound business practice is based. They are elucidated in standard books on the subject; and in order to keep in step with progressive business, the embryo, as well as the full-fledged traffic manager, must read and read and read. It is one of the prices that he must pay for the job. It is simply a question of understanding the underlying principles of business; then, no matter how the practice of these principles may change with the times, the results of the application of the principles never change. For illustration: It used to require from two months to two years to tan a hide with oak bark: now, it requires only from two to six days to tan leather with chrome. The *principle* is the same—changing rawhide into serviceable leather; and the *result* is the same—workable and wearable leather. Only the *method* of utilizing the principle to attain the result, has changed. Hence, the thing for you, as a traffic manager, to do, is to get your *principles* straight. Learn the laws of business and then, by keeping abreast of the needs of the times, fashion the best methods for getting the quickest and most satisfying results.

Human Action, the Source of All Business Practice

IN the learning of business principles, you are getting back to the sources of human action; for all business practices are the outgrowth of human action. Man himself is even more complicated than the business he has constructed. Which brings us to the study of *men,* than which there is no study more important for the traffic manager as well as for any other successful business man. In the study of men, it is well to begin with yourself. This will not prove an altogether easy or pleasant thing to do, for in each of us there is so much that could well be eliminated or improved. You may feel, indeed, that the more you know of yourself the better you like other people. Yet it is necessary that you be absolutely honest in your appraisal of yourself, of your knowledge, of your ignorances, of your strong points, and of your weaknesses.

It is another price you must pay for the job ahead.

This does not mean, however, that a man is to engage in any morbid introspection and worry about his shortcomings; but simply that out of this self-study and analysis he may obtain those things needful for the freedom, the development, the expansion, and the utilization of his potential powers.

The method of procedure should be about as follows:

First: To find out what his powers are.

Second: To determine which powers are necessary to the achievement of his desires.

Third: To ascertain the best way to bring those necessary powers up to the highest point of utility.

Fourth: Then actually to use those powers intelligently and constructively.

A traffic man who does these four things must, under the law of his own life, achieve a distinct success in his profession.

Every normal man is the repository of unused energy and power. Yet the mere possession of these powers is a vastly different thing from their use. The thing necessary for a degree of success is the translation of those passive powers into active powers, through the mediums which are possessed by every normal man; viz., *thought, feeling,* and *will.* In other words, your power as a successful traffic manager is conditioned by the degree of perfection of your physical body, the knowledge which you have in your memory for use in thinking, and the reliability of your moral faculties in directing thought into activity.

The Measure of Your Success in Terms of Capacity, Ability, and Efficiency

WHAT is your *capacity* for attainment? What is your *ability* to accomplish? How much of your ability is being translated into *efficiency?* For capacity, ability and efficiency are the terms of man power in which your accomplishments are reckoned.

Capacity is your latent and unfathomed power to acquire, to receive, to take in. It is the power to absorb and receive accurate impressions and images; the power to apprehend the content of

the mind. *Ability* is the power to do, to accomplish, to bring out and use the stored up power of one's capacity. It is also the power to get others to do things. Ability is that attribute of the mind which renders a man capable of producing results. *Efficiency* is power in action; it is ability put to use promptly, in the best way and at the least expense of time and effort.

To illustrate: A boiler is rated at 150 horsepower. That is its *capacity* to receive a fixed amount of water and fuel and, all things being equal, to produce steam sufficient to make 150 horsepower. But suppose, on account of a defect in the draft or elsewhere, the most steam that can be produced is 125 horsepower. Then the boiler's *ability* is 125 horsepower, which is 83.33 per cent of its capacity. Suppose, again, that only 80 horsepower is used to drive the machinery. That 80 would be the *efficiency* of the boiler, which is 64 per cent of its ability and 53.33 per cent of its capacity.

So, in the last analysis, it is the efficiency which you develop out of your ability that will determine the measure of your success as a traffic manager.

The price, therefore, which you pay for the job ahead and for holding down the job is not to be measured in terms of money, but by such experiences and knowledge as make up ability, which is then translated into efficiency in rendering useful service to mankind.

READING ASSIGNMENT No. 2

The Field of the Traffic Manager

By

GEORGE BURT ZIMMERMAN

GEORGE BURT ZIMMERMAN

Secretary and General Manager of the Columbia Refining Company

WHEN George Burt Zimmerman graduated from Ohio Northern University in 1905, he took up the study of law and is registered in Ohio as a practicing attorney. But the call of business was strong, so he soon entered the employ of the National Refining Company, Cleveland, and shortly rose to be traffic manager. In supervising the movement of this company's products in its many tank cars, Mr. Zimmerman came into close touch with the Interstate Commerce Commission, and gained intimate knowledge of its proceedings.

Later, resigning his position with the National Refining Company, he became secretary and general manager of the Columbia Refining Company of Cleveland, which position he now holds.

Mr. Zimmerman's long experience in traffic matters has enabled him, as instructor in the Traffic School of the Cleveland School of Technology, to be instrumental in the training of more than two hundred traffic men. The mature and seasoned advice which he is giving to the students of this course merits most careful consideration.

THE FIELD OF THE TRAFFIC MANAGER

THE LIVING, pulsating, net-work of railroads, highways, canals, and shipping routes, that engirdle the globe today, makes up the circulatory system—the veins and arteries—of our modern social and economic order. This entire net-work carrying stupendous quantities of merchandise to the various world markets—from New York to San Francisco, from London to Singapore, from Sydney to the Argentine—is the field of the traffic manager.

His responsibility as manager of the traffic department of a business or industrial organization is many sided and unique. His purpose is to secure the greatest material benefits to his organization and to its customers. This is accomplished mainly by securing the lowest lawful rates on shipments via the shortest and best routes. He thus cooperates with the sales department by enabling it to name the exact cost to the trade for landing the goods at their door. Also, this cooperation enables the buyers to figure far more intelligently on the cost price of goods purchased. In fact, the traffic department is interlocked with every branch of an industry. The profits of the traffic department may not be readily discernible, but its effect on the business as a whole is extremely valuable, and if properly administered will show an economic profit equal to any other department.

Traffic Management Demands High Ability

IT IS hackneyed but nevertheless a true saying that Industry, today as never before, demands trained men; so if any man desires to get into this class of fully equipped men, it is necessary for him to study, and study hard. This is especially true of traffic: the surest way to learn it is to study it—to study the experiences of those men (not one but many) who have gained knowledge by years of service in transportation. The sales manager for one of this country's largest corporations once remarked: "If a man should tell me he had had twenty years' *experience* as a bookkeeper, I might regard his experience as a liability rather than an asset, for a man's knowledge gained from *other men's* experiences may be more valuable than the knowledge gathered through his own limited personal experience." Indeed, all who are now looked upon as being successful traffic men had to go through a certain period of study or training. Just as a straight line is the shortest distance from one given point to another, so also is specialized knowledge, gained through study, the quickest and most direct route to success.

Organization heads have become fully convinced that well-developed traffic departments are essential. Realizing that a tremendous amount of money is spent annually for freight charges, the alert business man knows that its expenditure must be administered by experts, in order to prevent unnecessary losses through the mediums of freight overcharges, carelessness in billing, and inefficiency in handling shipments. Large sums

are also lost through ignorance of, and carelessness in, routing and rating shipments. Business organizations are willing to pay efficient traffic managers salaries commensurate with their ability.

The job of the traffic manager has consequently developed into a profession. His responsibilities cause him to be considered one of the keystone men of the organization. His advice and counsel, because of his specialized knowledge, are sought in choosing the location of plants, in production, and in distribution. Wrong judgment in any of these matters, from a transportation standpoint, might cause big losses to the company which he represents. The conception of many young men that the traffic man's job consists in auditing freight bills, filing claims, and studying tariffs, is only a fractional conception. Let's see how big is the field for traffic management.

Possibilities in Transportation

UNFORTUNATELY, the average American business man, before the great war awakened him, was very apt to consider his own country as the "whole world," so far as foreign trade possibilities were concerned. He was content to let foreign manufacturers—thoroughgoing Germans, suave Frenchmen, and astute Britishers—skim the cream off the foreign markets and take most of the milk too. Since the war, however, this attitude has changed. The still cautious but more promising attitude of "watchful waiting" has taken its place. This bids fair to ripen into a really vital "let's go" policy, as soon as the foreign credit situation begins to recover.

This, of course, has an important bearing on our near-future transportation possibilities and opportunities, and on the field of the traffic manager. It will mean, so far as America is concerned, a hitherto unheard of expansion of that field. Instead of the few paltry hundred-thousand-dollars'-worth of shoes, for instance, that we now export yearly to Great Britain, several million dollars' worth of that useful commodity will be sent to her annually. Other exported commodities will enjoy a similar increase in foreign consumption. But the greater possibilities that await us in the markets of the Orient, of South America, of Eastern and Western Europe, will largely be conditioned by the energy and enterprise of our advertising and selling methods. Then, and only then, will the science of transportation come into its own, and traffic management will become *the* profession of the immediate future.

Let us turn, for a moment, from this larger vision of the field of the traffic manager to a "close-up" of our own transportation problems.

The four principal factors of ocean transportation are: ships, harbors, docking facilities, and the wide ocean itself. But the factors of our interstate and intrastate transportation are many and complex. These have arisen largely because of the miracle-like growth of our railway systems, as the chief means of transportation. Ninety years ago, or in 1831, the year in which the first train was run in New York state, there were 72 miles of railroads in the United States. In 1918 there were 253,529 miles—enough railway to

reach around the earth ten times—which represents an average increase during those 90 years of 2,822 miles a year. In other words, for every 100 square miles of area in the United States there are 8.53 miles of railway. And roads are still being built and extended into the untouched regions of our country.

To handle the 408 billions of tons of freight which were transported in the United States in 1918, more than 2,000,000 freight cars were needed, and something like 50,000 freight locomotives. The territories reached by the railroads constitute a large portion, but by no means all of the field of the traffic manager.

It is, after all, the effectiveness—the speed and economy—of our domestic system of carriers that will make a larger foreign trade possible. It still costs as much to send a ton of merchandise 1,000 miles by *land* as it costs to ship the same ton 10,000 miles by *sea*.

Assembling Materials and Distributing Products

FIRST, raw material—coal from the Pennsylvania mines, for instance, oil from the wells of Texas, iron from the Lake Superior region, lumber from the forests of Oregon, wheat from the fields of Kansas—must be carried by rail or water route to the great manufacturing and fabricating centers. These are situated in New England, in the middle West, or along the Atlantic Seaboard. After the raw material has been made up into various commodities, they are shipped to the different marketing centers, and are distrib-

uted to and stored by jobbers and wholesalers in foreign or domestic markets. Next, they may be sent by rail, truck, or steamer to innumerable retailers and then delivered by truck, express, messenger, or parcel post to the ultimate consumer.

As a simple concrete illustration of the extent to which we are dependent upon transportation for practically every manufactured thing we have, take the materials which enter into the make-up of a pair of shiny leather shoes and follow them back to their sources. Where did these materials come from and how were they brought all into one place, to be assembled mechanically into that pair of soft-topped, patent-leather-vamp shoes which you bought the other day? The resources, not only of various parts of our own country, but of some of the uttermost parts of the earth were called upon to furnish those materials.

The hide for the leather in the vamp of the shoes was brought all the way from the Steppes of Russia, where it was grown on the back of a horse. The soft tops are made from goat skin, shipped up from South America, tanned in Philadelphia with gambier brought by ship from the West Indies. Wood oil from the Michigan forests rendered the tops soft and pliable. To obtain that permanent brilliance which characterizes patent leather, a composition was used that was made of lampblack from New York, turpentine from North Carolina, linseed oil from Ohio, dammar from New Zealand, asphalt from South America, benzoin from Sumatra in the South Seas, benzine from Pennsylvania, amber from

the Baltic Sea, sandarac from Africa, mastic from Greece, and Cuban lac.

From Texas the heavy sole leather was brought up to Kentucky, and tanned with oak bark from Tennessee. Scotland furnished the linen thread which binds together the sole and the welt, the welt and insole and upper. But, first, the thread had to be strengthened with resin extracted and brought up from the pine trees of Carolina or Georgia. The rubber trees in Brazil yielded the base for the cement which holds the thread channel around the edge of the soles. The leather for the box toe was hardened by shellac from Siam; while the leather in the tongue is Kangaroo hide from Australia. The polish on the soles was made of bayberry tallow from the West Indies, mixed with honey and beeswax from Florida, and turpentine from North Carolina. From Persia came the tragacanth used to clean the top and the tongue.

The twill for the shoe-lining was made from cotton grown in Mississippi, taken thence to Massachusetts to be woven, then transported to Philadelphia to be stiffened with a mixture made from Kansas wheat flour. Sea Island cotton supplied the thread for top stitching.

The wool in the felt heel pads came from Ohio sheep. It was felted in a New York town, distributed in Boston, and glued to place with gum arabic from Egypt. The shoe lace is made from cotton, grown in Louisiana, woven in Massachusetts, and colored with logwood from Yucatan, mixed with other chemicals.

The iron in the nails came from the ore mines of Sweden. In Connecticut, the lacing hooks were manufactured. They are made of a combination of zinc from the mines of Joplin and copper from the Lake Superior country. Silk from China provides the tag, made in New Jersey, which bears the name of the maker of the shoes.

Thus in the manufacture of a pair of high grade dress shoes, transportation of materials was necessary between points in some fifteen or sixteen states of the Union; and in addition, the transportation systems of South American countries, the East Indies, Africa, Great Britain, Siam, Persia, Egypt, Sweden, and China were called into service.

Some of the transportation of these materials was by means of railroads; some by steamships and steamboats—coastwise, transoceanic, and inland; and sometimes by motor trucks. In some cases, the means utilized were camels in the caravans of the far east, horses, mules, oxen, the backs of sweating porters—white men, yellow men, black men—slow moving barges on lazy tropical waters, sailboats, rowboats. All these various methods of transportation assisted in the bringing together of the materials which went to make up your pair of shoes.

What is true regarding the materials in a pair of shoes is true, in a greater or less degree, of practically every one of the many manufactured articles which we use continually. From this we may see the importance of transportation—the field of the traffic manager.

THE transportation of these vast quantities of merchandise, from raw product to consumer, has meanwhile given employment to thousands of other related activities—manufacturing and subsidiary commercial enterprises, banks, insurance, trust companies, etc. And an analysis of these various secondary factors takes us into the economics of transportation. Our transportation system (speaking nationally), in spite of its many imperfections, is one of the smoothest running and most generally effective examples of modern social organization. Its normal functioning is as vitally necessary to the well-being of our social, political, and economic body as is the healthy functioning of the heart to the life of the human body.

If, for any reason, the power of the minds that direct the continuous flow of merchandise over carrier routes by land or sea were suddenly withdrawn without replacement, this wonderfully organized and complex civilization of ours would soon become chaos. Witness the present plight of Russia—a helpless social derelict, a prey to moral as well as physical disease, famine, and death. Her condition is due largely to the complete breakdown of her entire transportation system.

What of our own country—of America? We see our principal carriers, the railroads, as a result of the war and of uneconomic administration, still staggering under a stupendous load of debt. We see our merchant marine dwindling almost to a cipher, in spite of war-time promises.

Traffic management—scientific, efficient traffic management—alone can relieve our difficulties. Let finance, manufacture, merchandising, and the public all do their part; but unless the proper kind of traffic management becomes more nearly universal than it is today, the high cost of living, strikes, lockouts and corruption—social, political, and individual—will continue.

Traffic Management and Business Values

TRAFFIC management is only incidentally concerned with the railroad system itself—with its engineering, accounting, financing, and promotion problems. It is concerned chiefly with the transportation *service,* and its relationships to business, to government, and to the public.

Its relation to business is particularly intimate and complex. The effectiveness of the carrier service has a direct bearing, for example, on the *cost* as well as on the *quantity* of commodities produced.

Production is the *process* whereby the raw materials of the earth are made fit for human use—for consumption.

Transportation is the *link* that binds the producer to the consumer. Its chief function is to increase what the economists call the "place utility" or "availability" of commodities. This invariably decreases their cost. We produce things because we want them. Any increase in availability and decrease in the cost of commodities increases our *wants,* and consequently greatly accelerates *production;* hence the power-

ful influence of modern transportation on the *quantity* as well as *quality* of things produced.

The relation of transportation to the exchange of wealth is also an important one. Economists, let us remember, consider wealth not as *money,* but as the *potential buying power* existing in commodities. Stock exchanges, banks, insurance and trust companies are all agencies for the exchange of wealth between producer and consumer. The least dispensable of these agencies is transportation.

Transportation has an important bearing on the distribution of wealth as well as on its exchange. According to certain well-established economic laws, it is the determining factor in the value or purchasing power of land, of wages, and of capital. One of the most important, far-reaching effects of the improved transportation service of the last century has been the lowering of the rates of interest on capital. In turn, lower interest rates have greatly increased the amount and availability of capital, considered in its broader sense as property.

Transportation and the Government

THE VITAL relationship that transportation bears to government is now firmly established by law. The Supreme Court of the United States holds that, "The business of a public carrier is of a *public* nature, and in performing it, the carrier is also performing, to a certain extent, a function of government, which requires him to perform the service upon equal terms to all." This means, among other things, that in the mat-

ter of shipments carriers must not differentiate between shippers of goods over their lines, by giving the preference of early delivery to those shippers who give their particular road the most business.

The keystone of the arch of all transportation systems, the world over, is the principle that, *transportation is a function of government.* Because of this principle, franchises give to private as well as to public corporations the right of way and the power to purchase property along carrier routes. This principle is also the reason, as well as the justification, for the ownership, operation, and control of public carrier systems by some governments. Pre-war Germany is the historic instance of successful government control. It is not our purpose here to go into the question of government ownership, with its advantages or disadvantages; but government *regulation* rather than *control* has characterized the evolution of our own transportation system, in times of "normalcy" at least.

The prosperity of the country and of the railroads is closely interwoven; and industries are so related that prosperity for one helps to produce it for the other. Both passenger and freight rates undoubtedly affect prosperity. The raw materials for factories and mills, the innumerable articles necessary to turn out a perfect finished product, and the products themselves all reflect freight rates. When rates are lowered, such a change is noticeable, especially in low grade commodities, where the cost of transportation is a great factor in the selling price of a given article.

It must never be forgotten that, while we speak of the relation of railways to business, to the government, and to the public, there is really only one relationship and that is to our *entire population*—the public. The railroad must serve all without favoritism.

During and immediately after the era of our "Empire Builders"—the railroad and steamship pioneers—our transportation system was seriously hampered by many evils. The rapid growth of unfair competition, combinations, trusts, and other monopolies soon made some kind of government regulation imperative. While socialists and "muck-rakers" raised the slogan of "government ownership," traffic commissions—federal and state—came into being. Stringent laws, rulings, and regulations were the order of the day. As a result, certain laws, which were necessary at the time they were passed, are now more of a hindrance than a help to the healthy growth and functioning of our transportation service. In the process of time, however, both legislators and laws will doubtless adjust themselves to really fundamental traffic requirements.

The Traffic Manager Himself

LET US now consider the traffic manager himself—his duties, responsibilities, and opportunities for growth and service.

As transportation systems and service became larger and more complex, the traffic manager soon became an indispensable factor in the operation of every railroad, steamship line, and large manufacturing plant. While his duties and responsi-

bility to society, to business, and to the government cannot be overestimated, his duties to his organization are also definite and vital. Although they may differ in certain minor respects in different types of traffic organization, they are fundamentally the same. This holds true, whether he is connected with a railroad, an industry, a shipping company, a government service, or a trade association.

Some of these duties, which a traffic manager must perform in the regular administration of his work, may be enumerated as follows:

The proper interpretation of tariffs, rules, and regulations.

The preparation, filing, and prosecution of claims for loss, damage, and overcharge.

The understanding of general railway practice and procedure.

And especially must he be able to cooperate with other departments—with the sales department, by securing rate adjustments; and with the purchasing department, by determining from what point, or points, it is most profitable to ship.

In view of these responsibilities, what does the traffic man owe to himself as a man? This; to develop and organize himself—physically, mentally, spiritually—so that he may be capable of rendering the utmost service. Insofar as he does this, will he be able to measure up to the full size of his job. And that job, if he measures up to it, is one of the biggest in industry.

If he hasn't had the opportunities to obtain the broad culture that travel and education give, let him do the next best thing—let him *read*.

Books on travel, economics, history, and industrial psychology are invaluable adjuncts to a well-rounded traffic education.

The *rules* for character-development and personal growth are simple. We all know them. But their *practice* is a matter of individual training and self-discipline. Their *mastery* will make the successful manager the successful *man*.

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